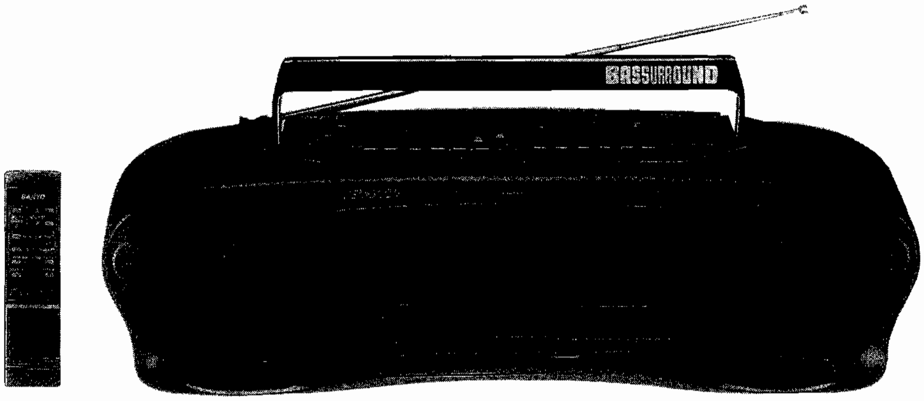
1840

SANYO

Service Manual

Portable CD/ Stereo Radio/ Double Cassette Recorder

M CD660K (GENERAL)



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PRODUCT CODE NO.
142 817 60

REFERENCE No. WM-580189

1240

SPECIFICATIONS

CASSETTE SECTION

Recording system	AC bias, 4 track
Erasing system	AC erase
Tape speed	4.8 cm/sec.
Fast forward time	160 sec. (C-60 tape) (TAPE A)
Rewind time	120 sec. (C-60 tape) (TAPE B)
Frequency response	40-14,000 Hz (Normal tape)

CD SECTION

Channels	2 channels
Frequency response	20-20,000 Hz (+1/−3 dB)
Dynamic range	85 dB (1kHz)
S/N ratio	85 dB
Channel separation	70 dB (1kHz)
Wow & Flutter	Undetectable
Sampling frequency	44.1 kHz
Quantization	16 bits linear/ch
Pick up light source	Semi-conductor laser
Pick up wave length	790nm

RADIO SECTION

Tuning ranges	MW/AM:525 — 1,610 kHz FM: 87.5 — 108 MHz SW1: 2.3 — 7.0 MHz SW2: 7.0 — 22.0 MHz
Antennas	Built-in ferrite bar and telescopic rod antennas

GENERAL

Loudspeakers	12cm × 2, 8 ohms Tweeter × 2 10cm × 1.6 ohms
Output Power	70 W (P.M.P.O.)
Terminals	
Input	EXT MIC: 1 mV/3 kohms
Output	PHONES: 32 ohms CD-OUT: 1.0 V/47 kohms SURROUND SPKR.: 8 ohms
Power source	AC: 110-127/200-220/230-250V, 50/60 Hz DC: Rechargeable battery pack (LBT-12, optional) 12-15V Car battery cord (CA-12, optional) Power failure backup: 4.5V, 3 "AA" size batteries (optional) Remote control unit: 3V, 2 "AA" size batteries (optional)
Power consumption	67 W
Dimensions	620 × 183 × 218 mm (W × H × D)
Weight (approx.)	6.6 kg including batteries.

Specifications subject to change without notice.

LASER BEAM INFORMATION

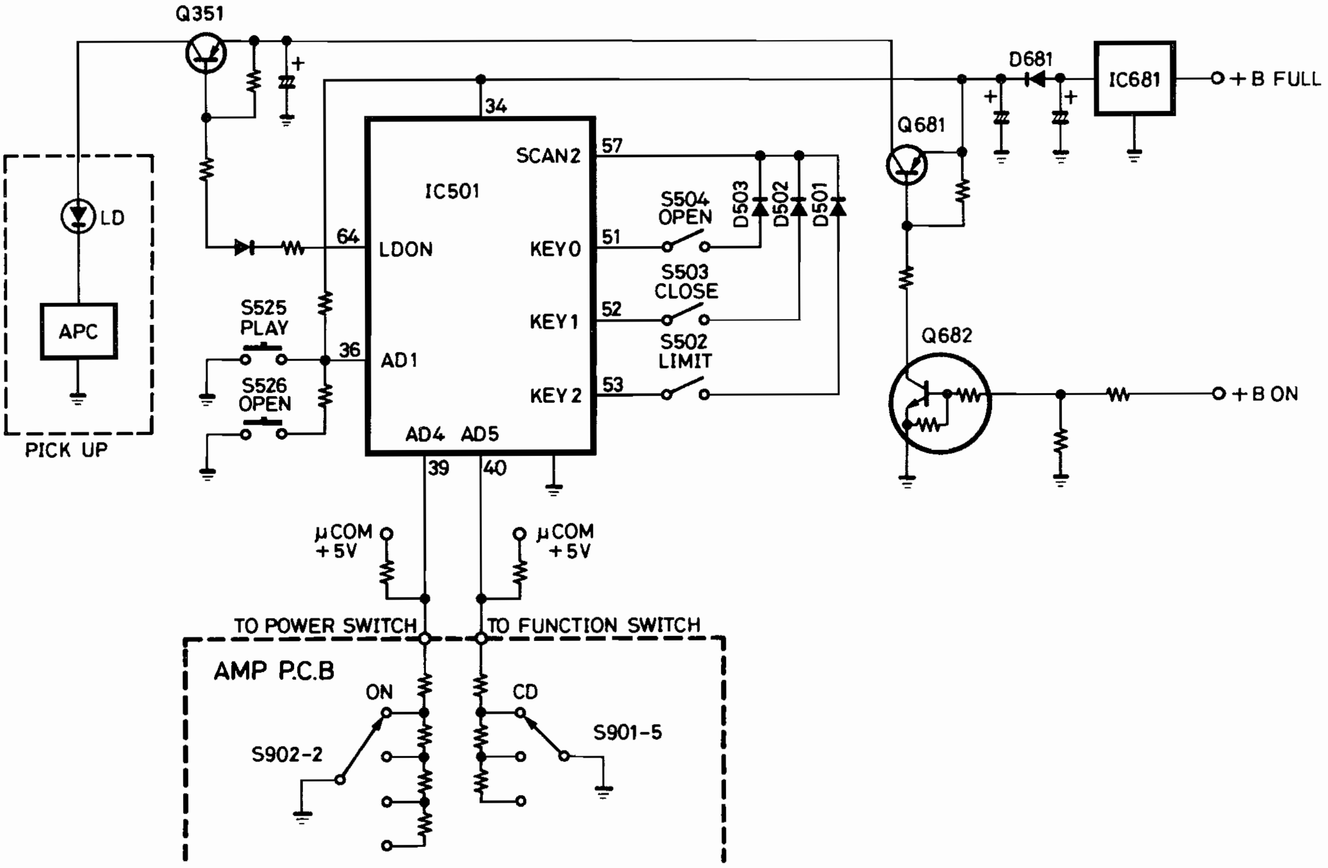
a. CONDITIONS FOR LASER BEAM EMISSION FROM THE PICK-UP

The conditions for laser beam emission from the pick-up are the satisfaction of all three of the following points.

(a) With the disc tray closed.
(b) The FUNCTION switch must be at the "CD" position.
(c) In the SLEEP/TIMER operation condition (with the power switch ON or at the "SLEEP" or "TIMER" position).

THE PICK-UP USED IN THE COMPACT DISC PLAYER IS A CLASS 1 LASER PRODUCT.
INVISIBLE LASER RADIATION IS EMITTED.
EXPOSURE TO BEAM DANGEROUS.

OUTPUT POWER	**1mW Max.**
WAVE LENGTH	**790nm**

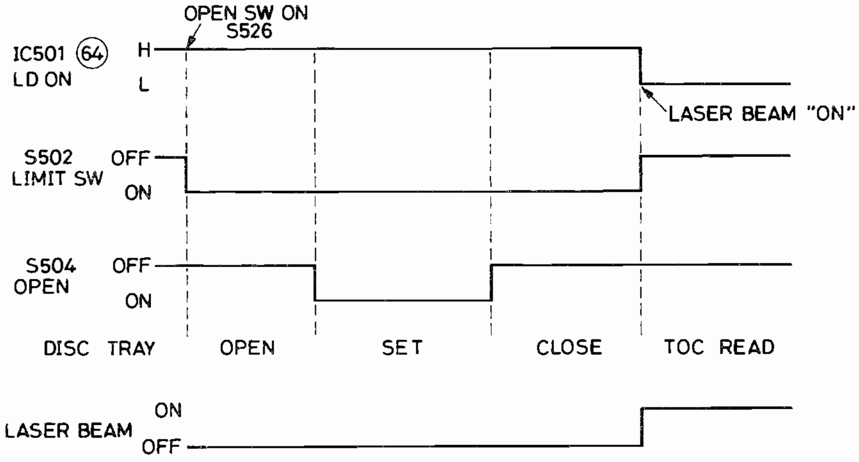

Q351
LD
APC
PICK UP
S525
PLAY
S526
OPEN
64
LDON
36
AD1
34
IC501
SCAN2
57
KEY0
51
KEY1
52
KEY2
53
AD4 AD5
39
40
S504
OPEN
S503
CLOSE
S502
LIMIT
D503
D502
D501
D681
IC681
+B FULL
Q681
Q682
+B ON
µCOM +5V
µCOM +5V
TO POWER SWITCH
TO FUNCTION SWITCH
AMP P.C.B
ON
CD
S902-2
S901-5

(1) Laser beams are emitted from the pick-up when conditions (a) - (c) are satisfied.
(2) The pick-up is moved to the innermost groove.
(3) The servos are activated.
(4) The servos are not activated if a disc is not loaded.
(5) If the TOC (Table of Contents) is not read, the LCD displays "CD ON", and the laser beam emission stops.
(6) Laser beams will not thereafter be emitted unless and until conditions (a) - (c) are all once again satisfied.
(7) If a disc is loaded, the total number of tracks on the disc, and the total play time, will be displayed, and there is no emission of laser beams.
(8) When the PLAY/PAUSE button is then pressed, laser beams will be emitted until there is a change to the STOP mode.

b. IC501 : MICROCOMPUTER IC

SCAN 2 (Pin 57)	:	Scan output for key input
KEY 0 (Pin 51)	:	Key input
KEY 1 (Pin 52)	:	Key input
KEY 2 (Pin 53)	:	Key input
LD ON (Pin 64)	:	Laser diode control output signal (LOW active)
AD 1 (Pin 36)	:	A/D input (PLAY/PAUSE, OPEN)
AD 4 (Pin 39)	:	A/D input (POWER FUNCTION)
AD 5 (Pin 40)	:	A/D input (MODE FUNCTION)

C. TIMING CHART



d. OPERATION

(a) It will be assumed here that the compact disc is not set.

(b) Switch ON the Power and set the FUNCTION switch to the "CD" position.

(c) Press the OPEN/CLOSE switch (S526) to open the disc tray. The OPEN switch (S504) will be switched ON at this time.

(d) Place a compact disc in the tray.

(e) Press the OPEN/CLOSE switch (S526). The disc tray will close. The OPEN switch (S504) will be switched OFF at this time.

(f) When the disc is completely loaded, the LIMIT switch (S502) will be switched from ON to OFF. At this time, the LD ON (pin 64) of IC501 will change from HIGH level to LOW level, and transistor Q351 will be switched ON, DC5V will be supplied to the power-supply circuit.

(g) A voltage of +5V is input to the APC (Automatic Power Control) circuit of the pick-up, and laser beams are emittd.

(h) When the disc begins rotation and the TOC (Table of Contents) is read, the LCD displays the total number of tracks and the total play time.
Then, the disc's rotation stops, LD ON changes from LOW level to HIGH leve, Q351 is switched OFF, and the laser beams stop.

(i) When the PLAY/PAUSE key is pressed once again, LD ON changes again from HIGH level to LOW level, Q351 is switched ON, and laser beams are emitted.

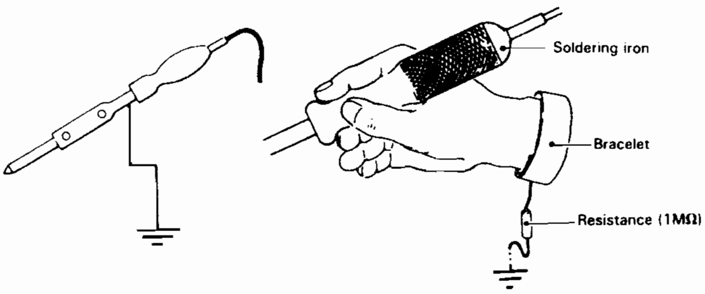
LASER BEAM DESCRIPTION AND HANDLING OF MAIN PARTS

PICK-UP HANDLING, REPLACEMENT AND SERVICE NOTES

- Preparations

The compact-disc player incorporates a great many ICs and LSIs, as well as the pick-up (laser diode).

Because these components are extremely sensitive to static electricity and therefore can be damaged by a high-voltage concentration of static electricity, the greatest care is necessary for their handing. In addition, many high-precision components, such as the lens, are used in the pick-up.



(1) The compact-disc player and its components must never be repaired or stored in places where the temperature or humidity is high, in places where there is a strong magnetic field, or where there is excessive dust.

(2) Before making any replacement of a component, first disconnect the power cord's plug from the electrical outlet.

(3) All equipment, measuring instruments and other tools must be grounded.

(4) The workbench must be covered by a conductive sheet and grounded.

(5) In order to prevent AC leakage from a soldering iron, metallic tools must be grounded.

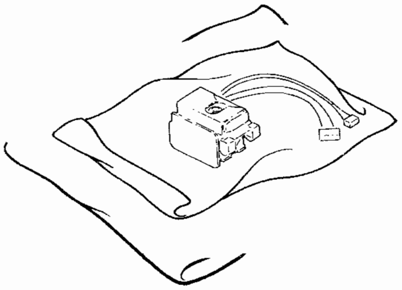
(6) Workers must be grounded.

(7) The laser beam from the pick-up must never be permitted to enter the eyes directly, and should not be allowed to contact the skin.

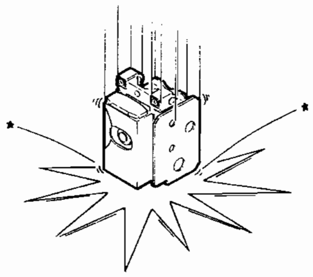
(a) Unpacking

In order to prevent damage by static electricity during shipment, the pick-up is packed in a special conductive bag. The pick-up should be left in this bag until immediately prior to use.

Storage in conductive bag



Avoid impact shocks.

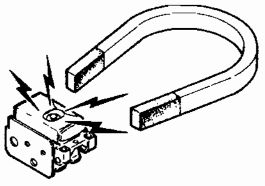


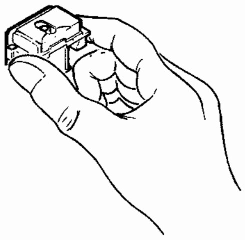
(b) Magnetic fields

A powerful magnet is used in the pick-up. Take care not to bring magnetic materials nearby.

(c) Places that must not be touched

- Pick-up lens
- Pick-up screws
- Printed-circuit board pattern



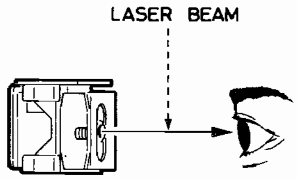


Your eyes can be injured if the laser beam is allowed to enter them.

Take the greatest care to absolutely avoid eye contact with the laser beam !

Never switch ON the power to a pick-up if its laser output port (object lens, etc.) is damaged.

Never look directly at the laser beam, and do not allow the beam to contact your skin.



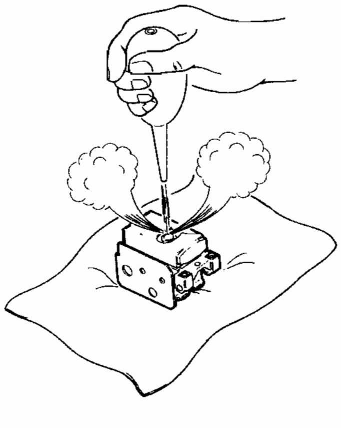
Cleaning the lens surface

If dust gets on the lens surface

Use an air brush (such as used for cleaning a camera lens) to blow away the dust.

The lens is held by a support spring.

If the lens surface becomes dirty, use a soft cotton swab or similar tool dampened with isopropyl alcohol to clean it, taking care not to apply excessive force and damage the leno's support spring.

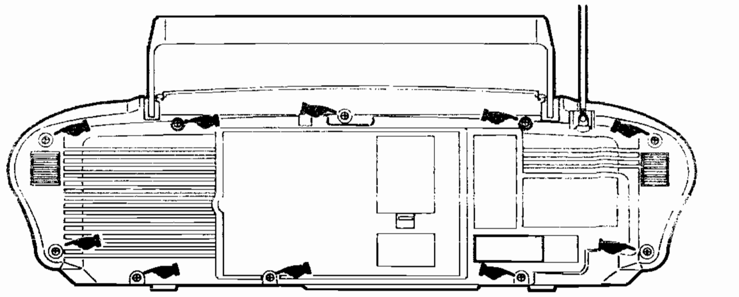


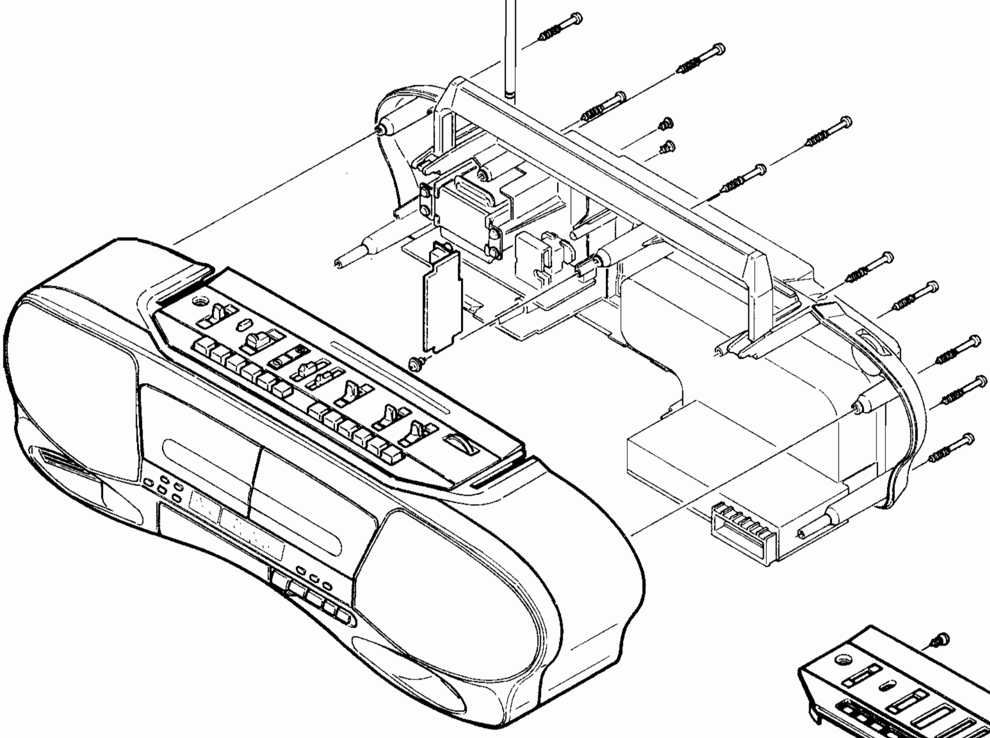
Never attempt to disassemble the lens.

REMOVAL AND INSTALLATION

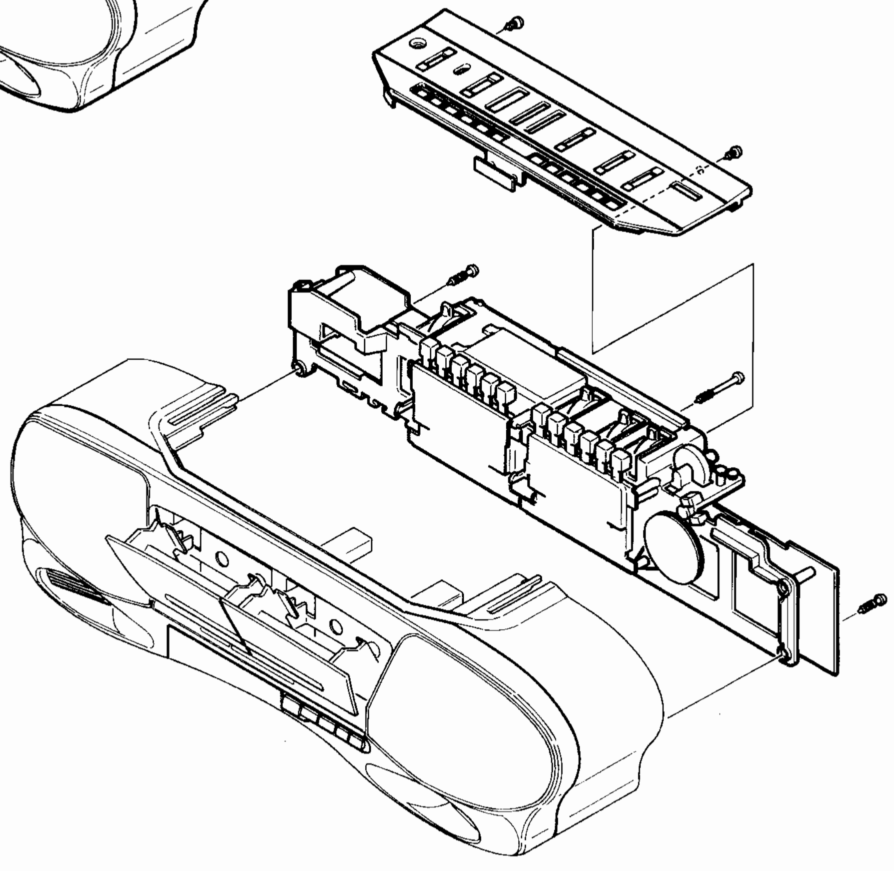
a. CABINET

- Disconnect the power cord plug from the electrical outled.

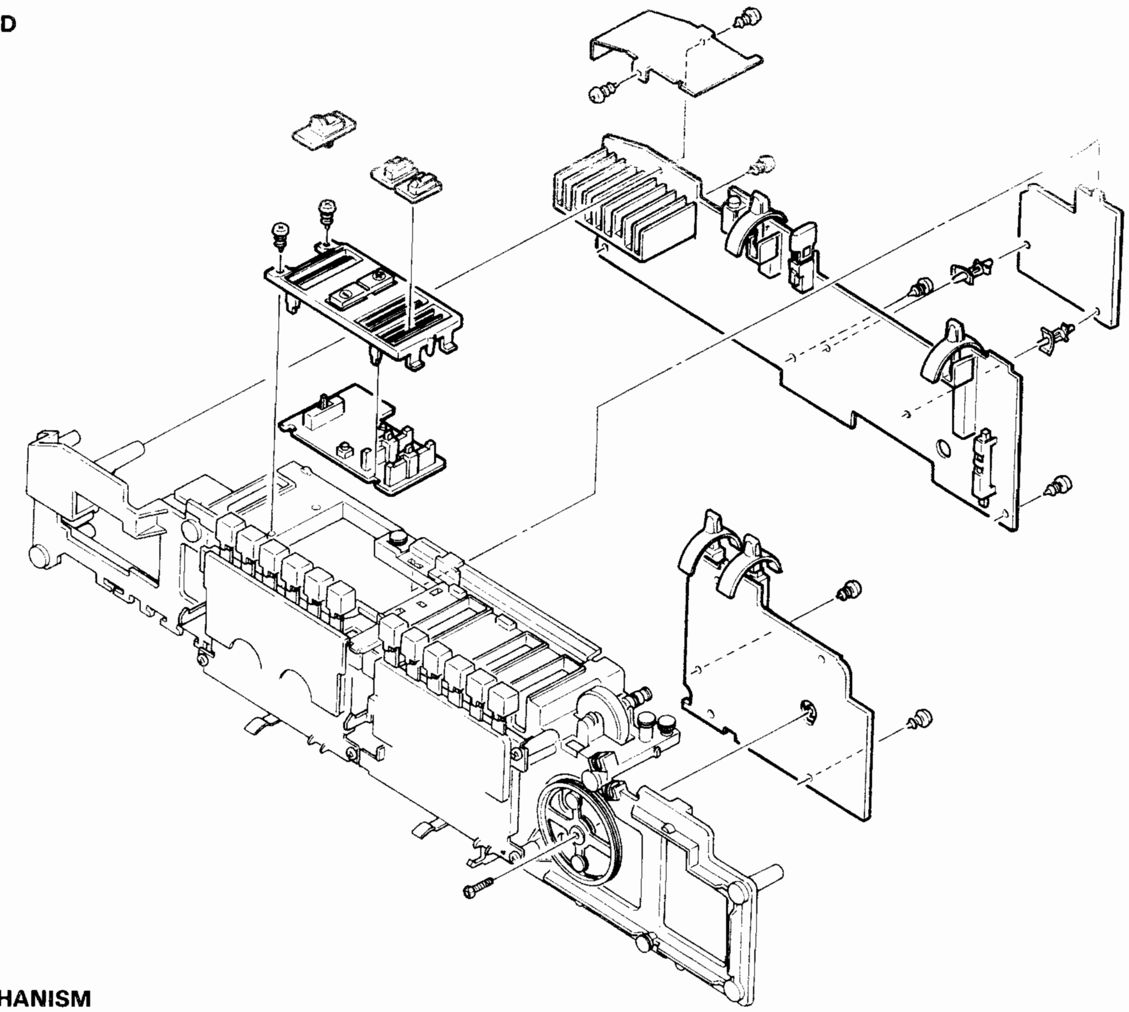




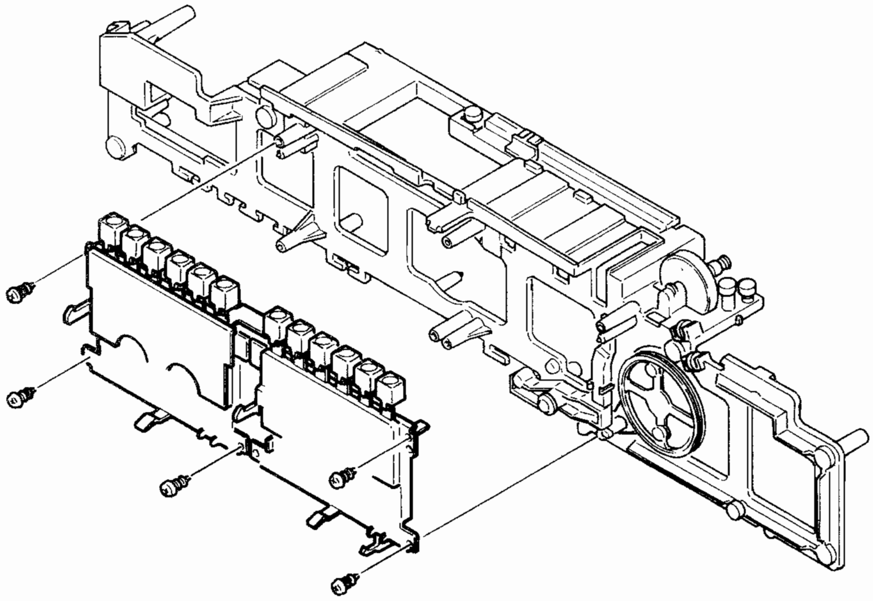
b. CHASSIS



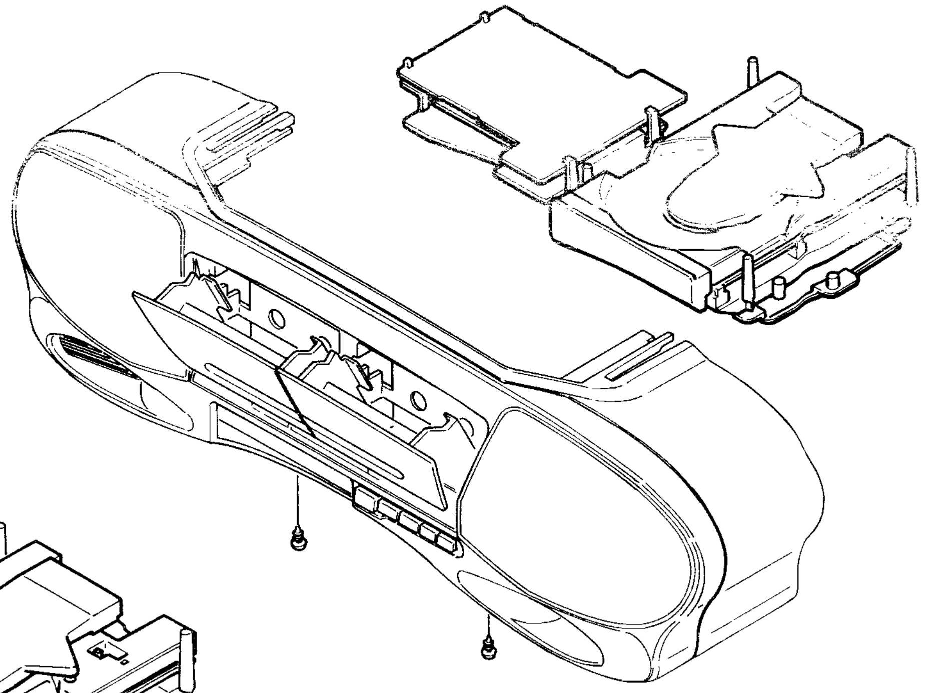
c. P.C. BOARD



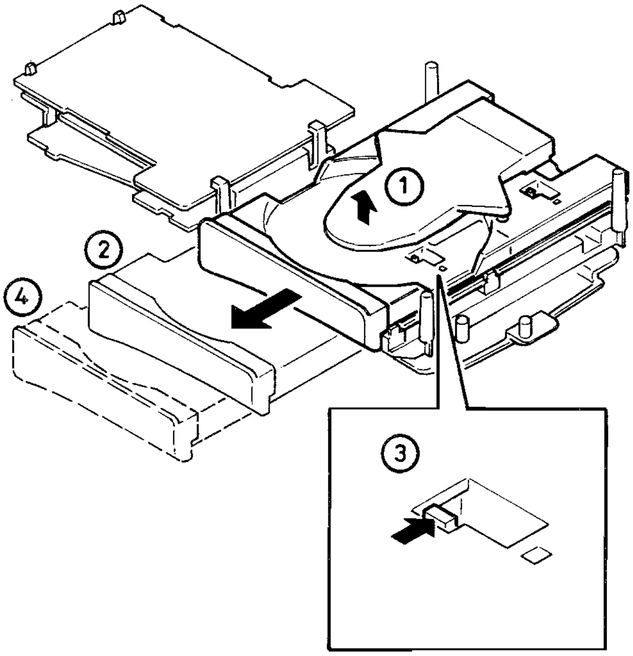
d. TAPE MECHANISM



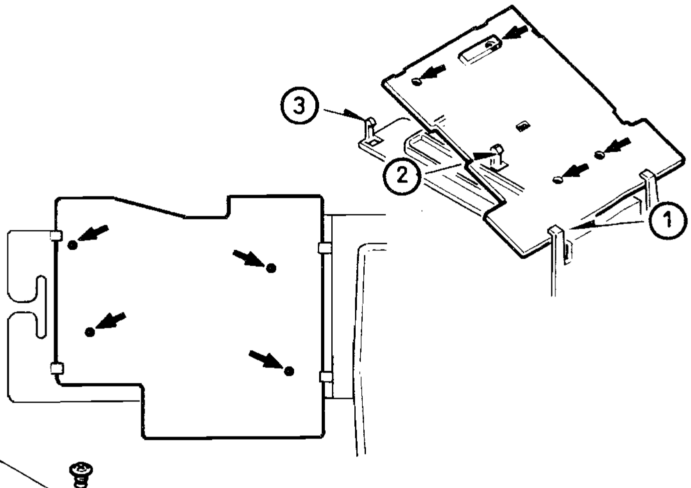
e. CD BLOCK



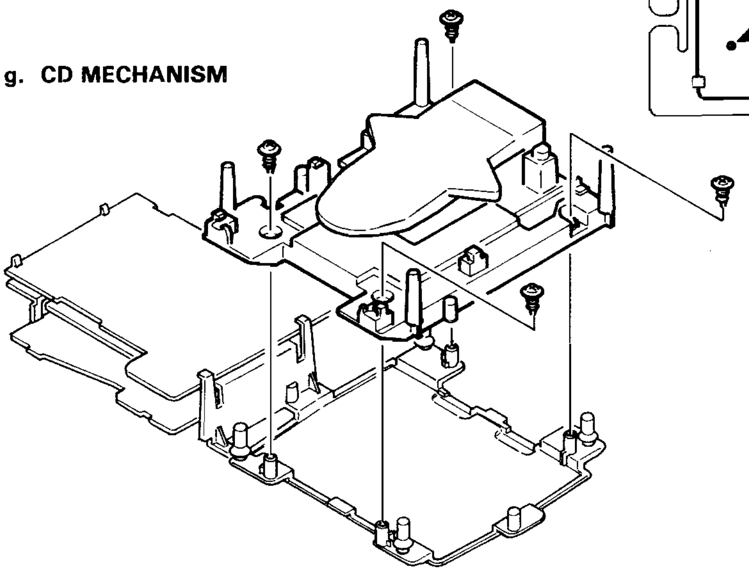
f. DISC TRAY



h. CD BLOCK P.C. BOARD

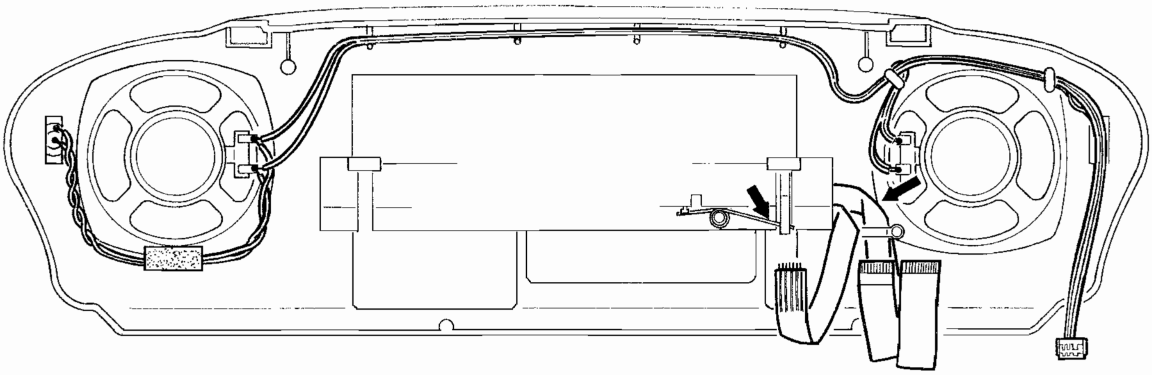


g. CD MECHANISM



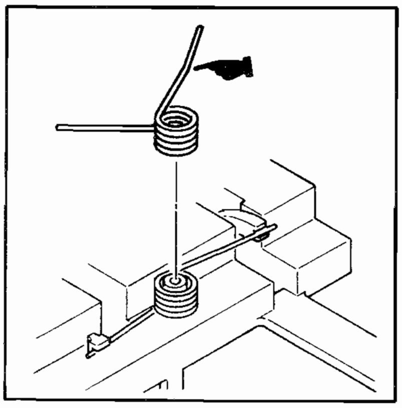
i. WIRING LAYOUT (CABINET BLOCK)

- All wiring should be returned to the original position after work is completed.

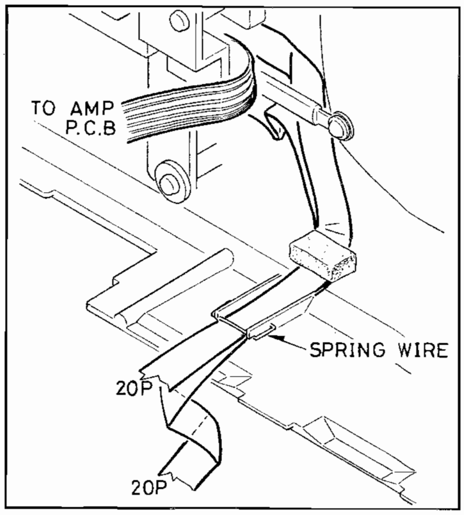


j. SPRING, TOP LID

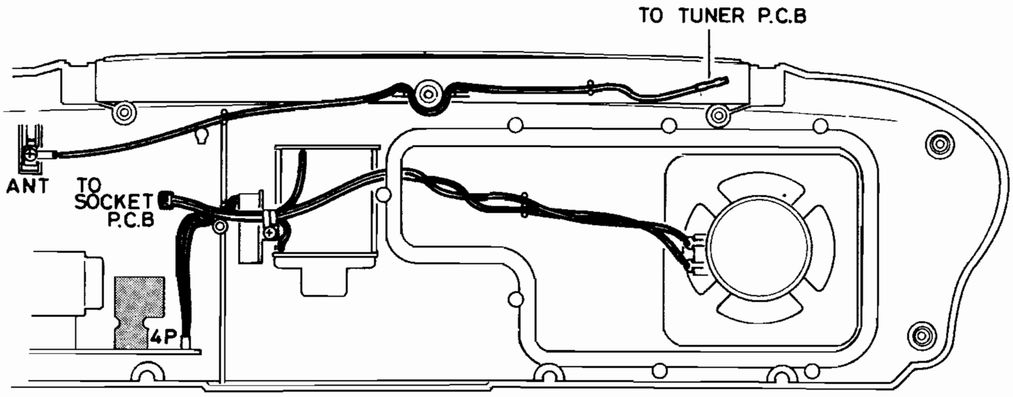
Slightly bent



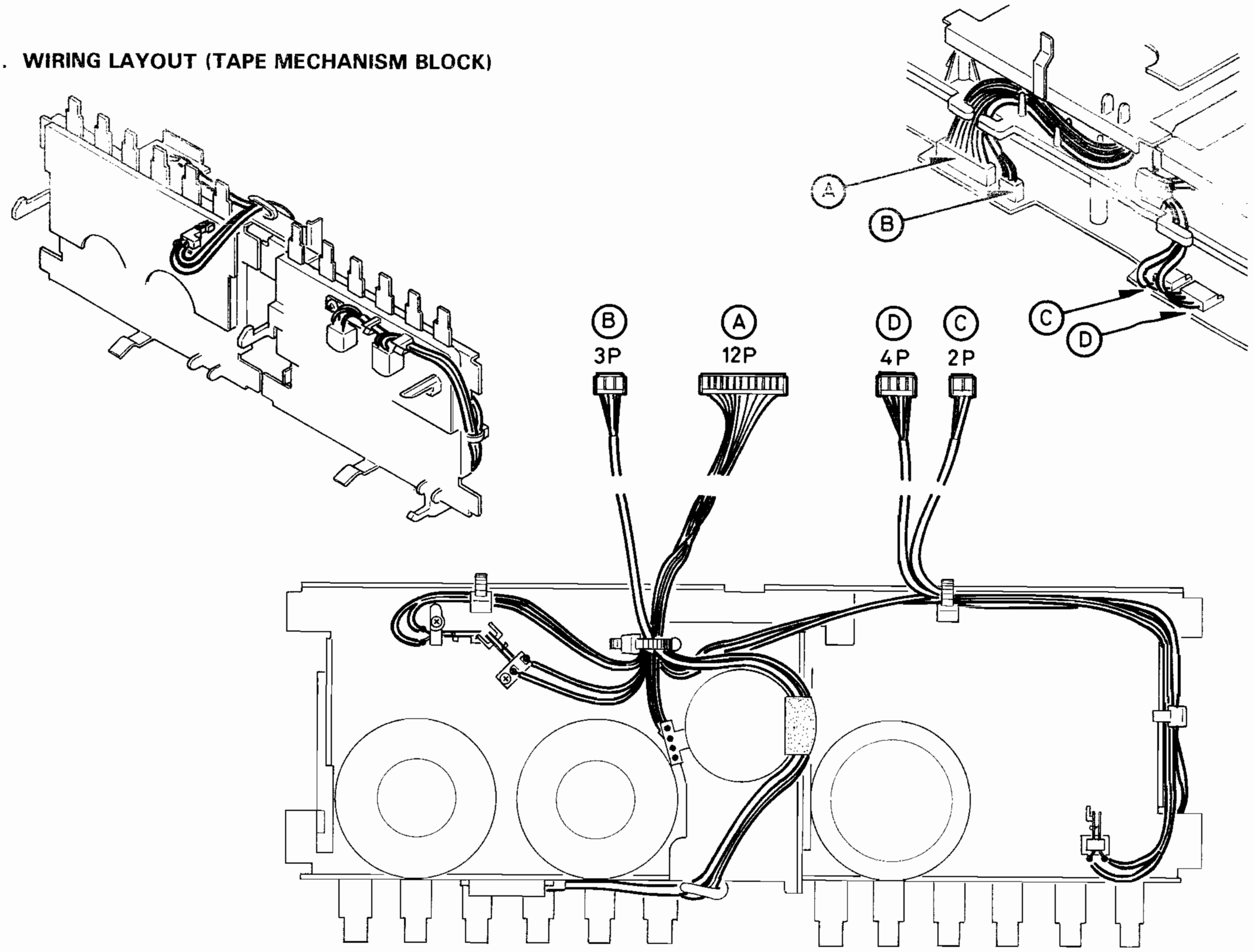
K. SPRING WIRE


TO AMP
P.C.B
SPRING WIRE
20P
20P

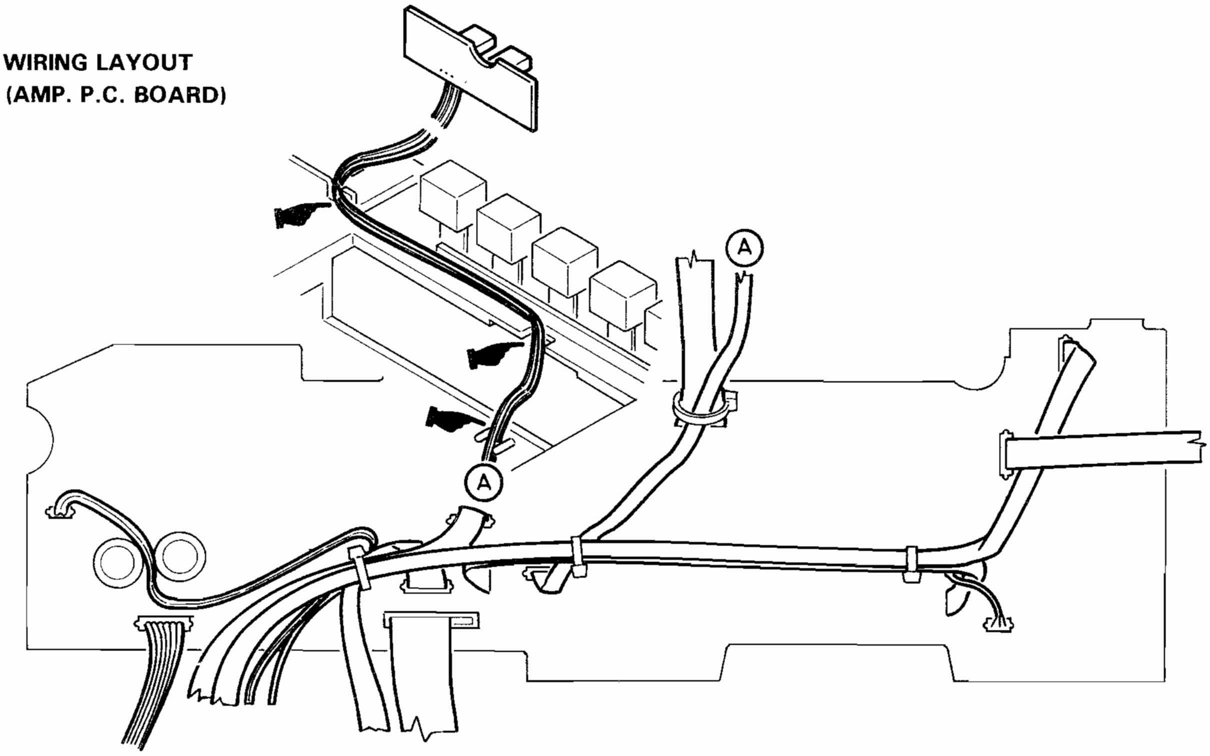
l. WIRING LAYOUT (SUPER WOOFER SPEAKER)


TO TUNER P.C.B
ANT
TO
SOCKET
P.C.B
4P

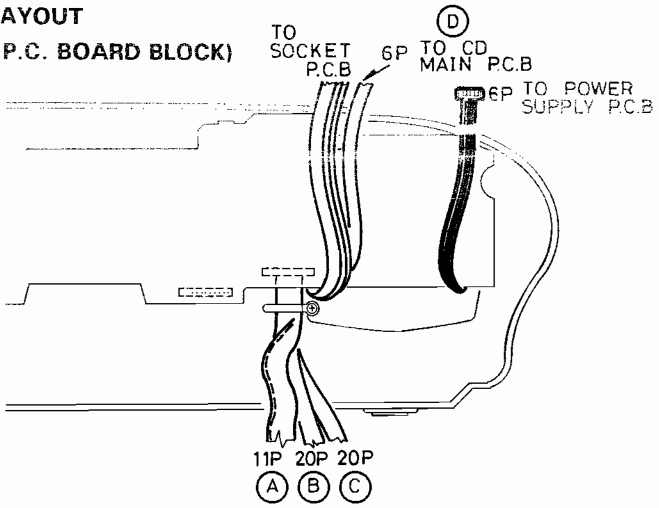
m. WIRING LAYOUT (TAPE MECHANISM BLOCK)

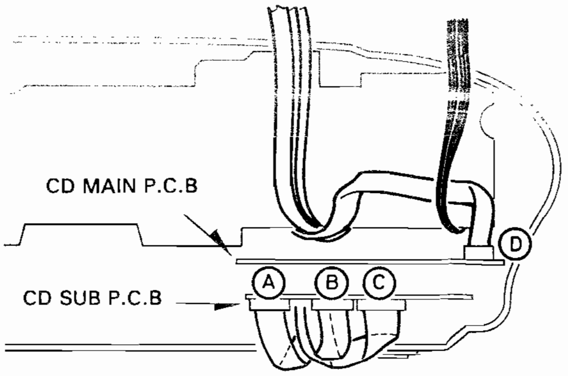

A
B
B
3P
A
12P
D
4P
C
2P
C
D

n. WIRING LAYOUT (AMP. P.C. BOARD)

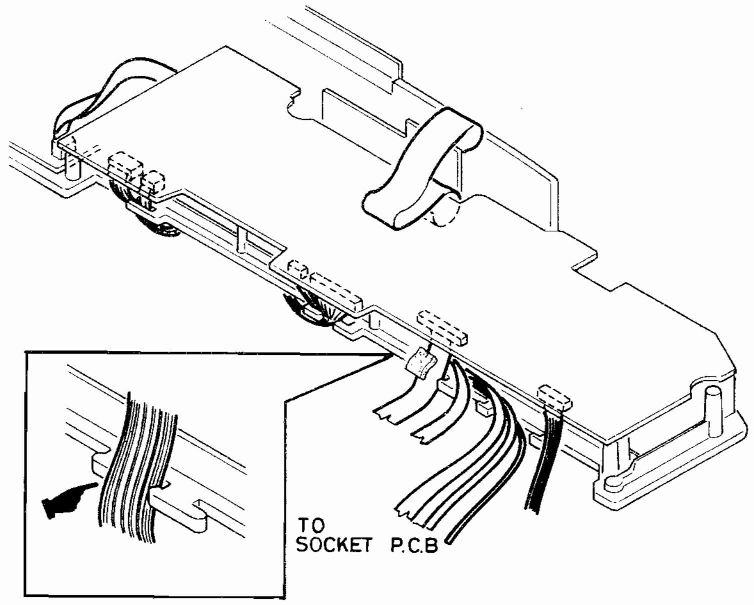


o. WIRING LAYOUT (SOCKET P.C. BOARD BLOCK)


TO SOCKET P.C.B
6P
Ⓓ
TO CD MAIN P.C.B
6P TO POWER SUPPLY P.C.B
11P 20P 20P
Ⓐ Ⓑ Ⓒ

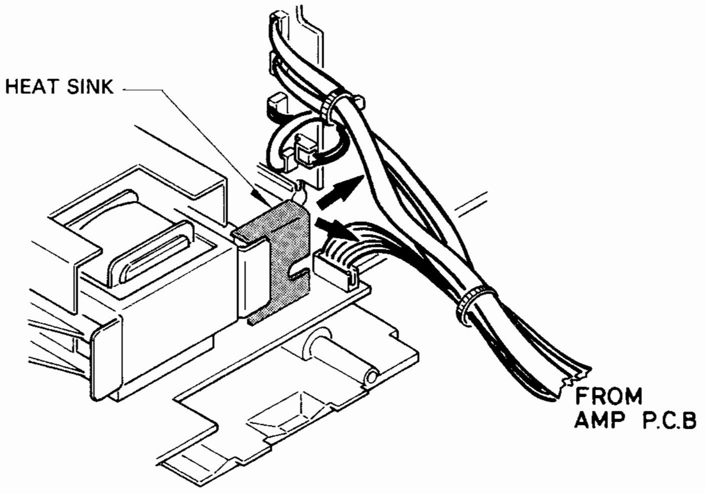

CD MAIN P.C.B
Ⓓ
CD SUB P.C.B
Ⓐ Ⓑ Ⓒ

p. WIRING LAYOUT (AMP. BLOCK)

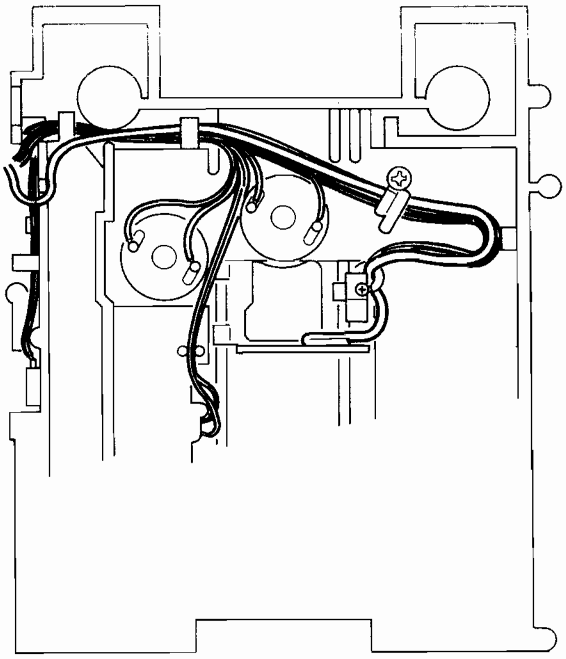

TO SOCKET P.C.B

q. WIRING LAYOUT (POWER TRANSFORMER BLOCK)

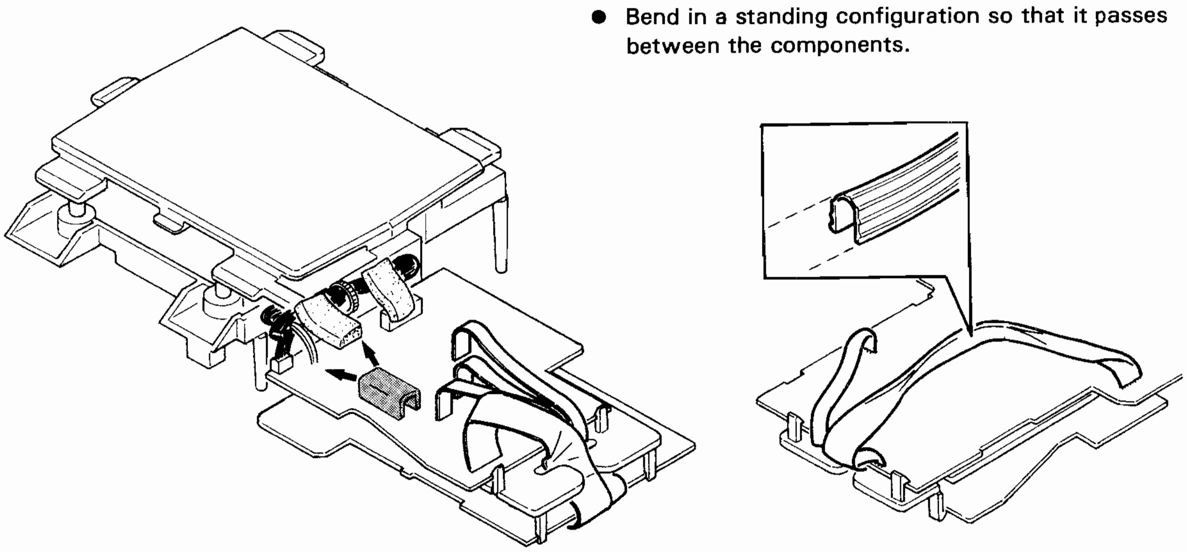
- Arrange the lead wires so that they are not near the heat sink of the power-supply board.


HEAT SINK
FROM AMP P.C.B

r. WIRING LAYOUT (CD MECHANISM BLOCK)



s. WIRING LAYOUT (CD P.C. BOARD BLOCK)

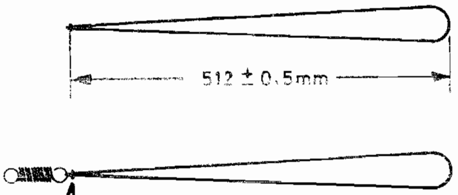


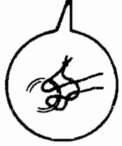
- Bend in a standing configuration so that it passes between the components.

- Arrange the flexible printed-circuit board so that it is not near the heat sink of the CD board.

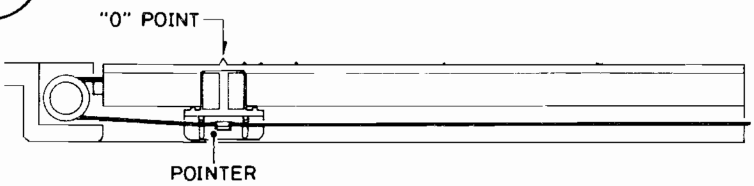
DIAL CORD INSTALLATION

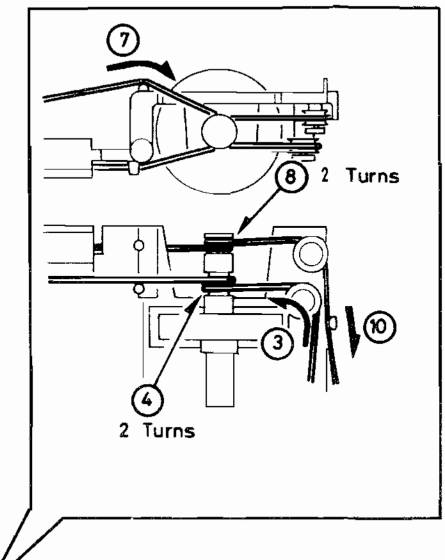
- **PREPARATIONS**

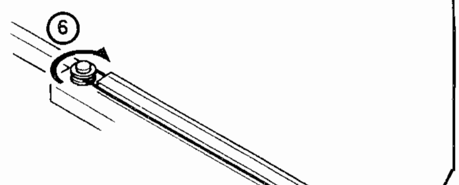


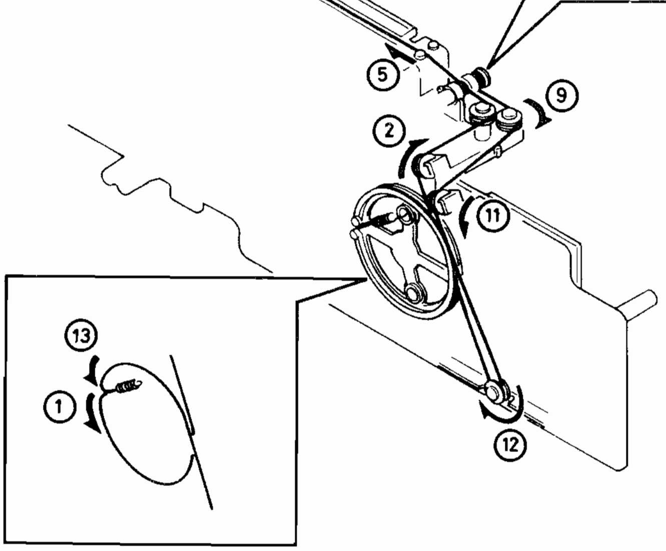


- Relationship between pointer and frequency point.

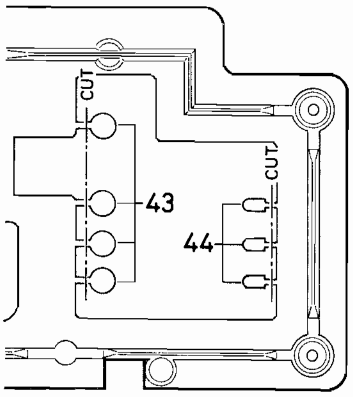

"0" POINT
POINTER


⑦
⑧ 2 Turns
⑩
③
④
2 Turns





- The pulley (42) for the dial cord is not included with the chassis (41) available for supply.
The set pin for the pulley is moduled where shown in the figure; attach after passing through the chassis.

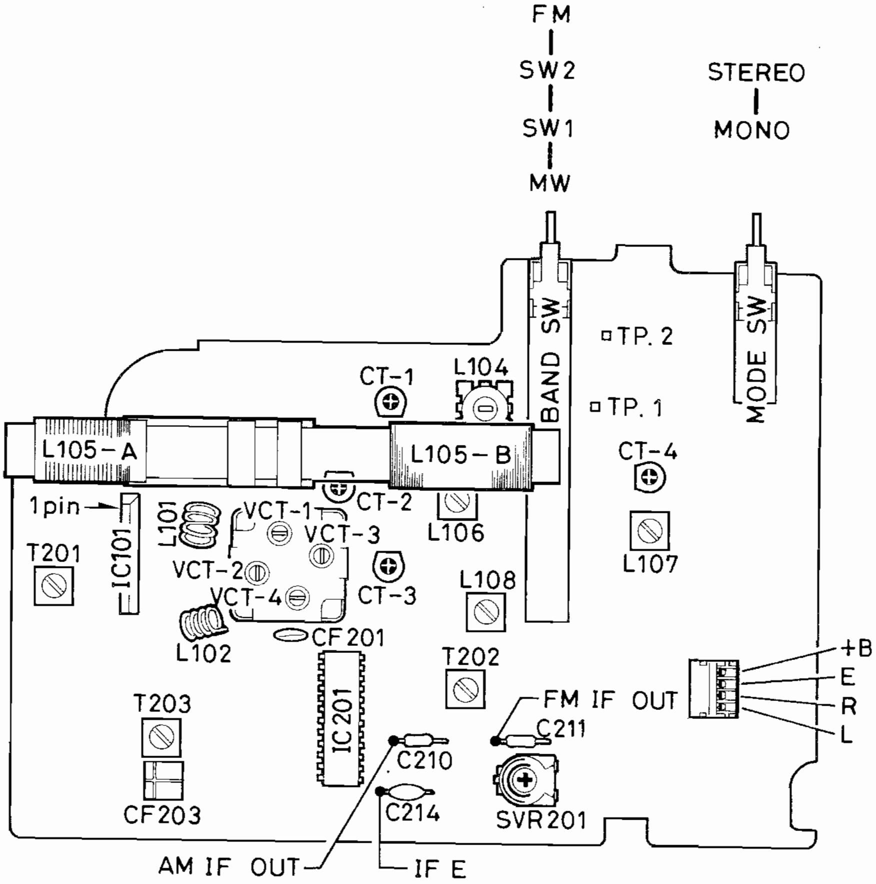

CUT
CUT
43
44

TUNER ADJUSTMENTS

- Use a plastic screwdriver for adjustment.
- Adjust the intermediate frequency of FM and MW to the frequency of ceramic filter.
- Make adjustments without removing the tuner printed-circuit board from the cabinet.

Supply voltage	: DC 15V	TREBLE VOLUME	: MIN
Speaker impedance	: 8 Ω	SURROUND SWITCH	: OFF
Standard Ouptput	: 50mW (0.63V)		
Function selector	: RADIO		

PARTS LOCATION


FM
SW2
SW1
MW
STEREO
MONO
BAND SW
MODE SW
TP. 2
TP. 1
CT-1
L104
L105-A
L105-B
CT-4
1pin
L101
IC101
VCT-1
CT-2
VCT-3
L106
T201
VCT-2
L107
L108
VCT-4
CT-3
L102
CF201
T202
+B
E
R
L
T203
IC201
FM IF OUT
C211
C210
C214
SVR201
CF203
AM IF OUT
IF E

(a) Adjustment of MW BAND
BAND SELECT SWITCH : MW

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	IF	Closed the output terminal by sweep generator, it place to L105-B	Connect sweep generator to C210, C214(GND)	455kHz	Low	T203	MAX.
2	Tuning Coverage	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	515kHz	Low end	L108	MAX.
3				1650kHz	High end	VCT-4	
4	Tracking	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	600kHz	600kHz	L105-B	MAX.
5				1400kHz	1400kHz	VCT-3	
6	Repeat adjustments						

(b) **Adjustment of SW1 BAND**
BAND SELECT SWITCH : SW1

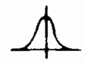
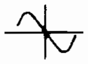
Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	Tuning Coverage	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	2.2MHz	Low end	L107	MAX.
2				7.3MHz	High end	CT-4	
3	Tracking	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	2.5MHz	2.5MHz	L105-A	MAX.
4				6.5MHz	6.5MHz	CT-2	
5	Repeat adjustments						

(c) **Adjustment of SW2 BAND**
BAND SELECT SWITCH : SW2

SW2 DUMMY ANTENNA: 50Ω 10pF

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	Tuning Coverage	Connect AM SG to ANT terminal through dummy	Connect VTVM to speaker terminals	6.8MHz	Low end	L106	MAX.
2				22.7MHz	High end	CT-3	
3	Tracking	Connect AM SG to ANT terminal through dummy	Connect VTVM to speaker terminals	8.0MHz	8.0MHz	L104	MAX.
4				21.0MHz	21.0MHz	CT-1	
5	Repeat adjustments						

(d) **Adjustment of FM BAND**
BAND SELECT SWITCH : FM

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	IF	Connect sweep generator of Output line to IC101 ① TP2 (GND)	Connect sweep generator of input line to C211, C214 (GND)	10.7MHz	Low	T201	
2	Detector					T202	
3	Tuning Coverage	Connect FM SG to TP-1(H), TP2(GND)	Connect VTVM to speaker terminals	87.0MHz	Low end	L102	MAX.
4				109.0MHz	High end	VCT-2	
5	Tracking	Connect FM SG to TP1(H), TP-2(GND)	Connect VTVM to speaker terminals	90.0MHz	90.0MHz	L101	MAX.
6				106.0MHz	106.0MHz	VCT-1	
7	Repeat adjustments						

TUNER ADJUSTMENTS

(e) Adjustment of FM VCO

FM MODE SWITCH : FM STEREO

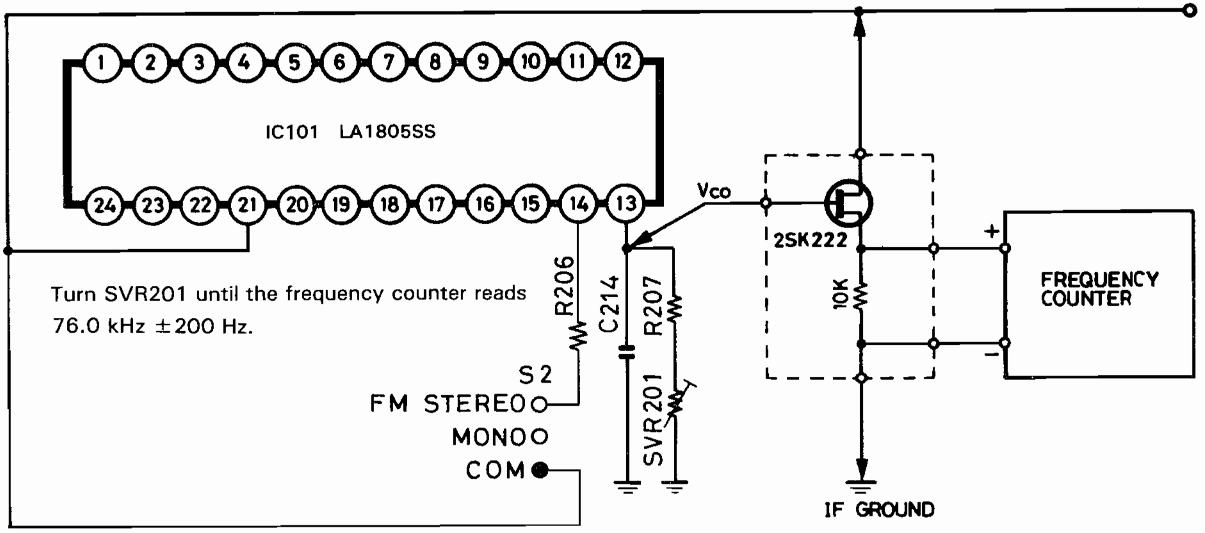
1) INPUT

SIGNAL : 60dB 22.5kHz DEV. AT 98MHz
CONNECTION : HOT TO TP-1 GROUND TO TP-2

2) ADJUSTMENT

ADJUST : SVR201
FREQUENCY : 76kHz ± 200Hz

3) INSTALLATION OF FREQUENCY COUNTER AND BUFFER AMP.



Vcc
1
2
3
4
5
6
7
8
9
10
11
12
IC101 LA1805SS
24
23
22
21
20
19
18
17
16
15
14
13
Vco
2SK222
10K
+
−
FREQUENCY COUNTER
R206
C214
R207
S2
FM STEREO
MONO
COM
SVR201
IF GROUND

Turn SVR201 until the frequency counter reads 76.0 kHz ±200 Hz.

TAPE DECK ADJUSTMENTS

a. CHECKING THE MECHANISM TORQUES

- Clean the head, capstan and pinch roller before making any measurement.
- Check during both normal and reverse playback.

TAPE "A"

Measurement	Rewind torque	Back tension	Tape tension
Cassette for measurement	PLAY:TW-2111A(FWD) PLAY:TW-2121A(REV) F. FWD/REW:TW2231	PLAY:TW-2111A(FWD) PLAY:TW-2121A(REV)	Drive−power cassette TW-2412(FWD) TW-2422(REV)
PLAY	27~60gr•cm	2~5gr•cm	100gr or more
F. FWD	55~120gr•cm	−	−
REW	55~120gr•cm	−	−

TAPE "B"

Measurement	Rewind torque	Back tension	Tape tension
Cassette for measurement	PLAY:TW-2111A F. FWD/REW:TW2231	PLAY:TW-2111A	Drive−power cassette TW-2412
PLAY	30~60gr•cm	2.0~4.5gr•cm	160gr or more
F. FWD	55~120gr•cm	−	−
REW	55~120gr•cm	−	−

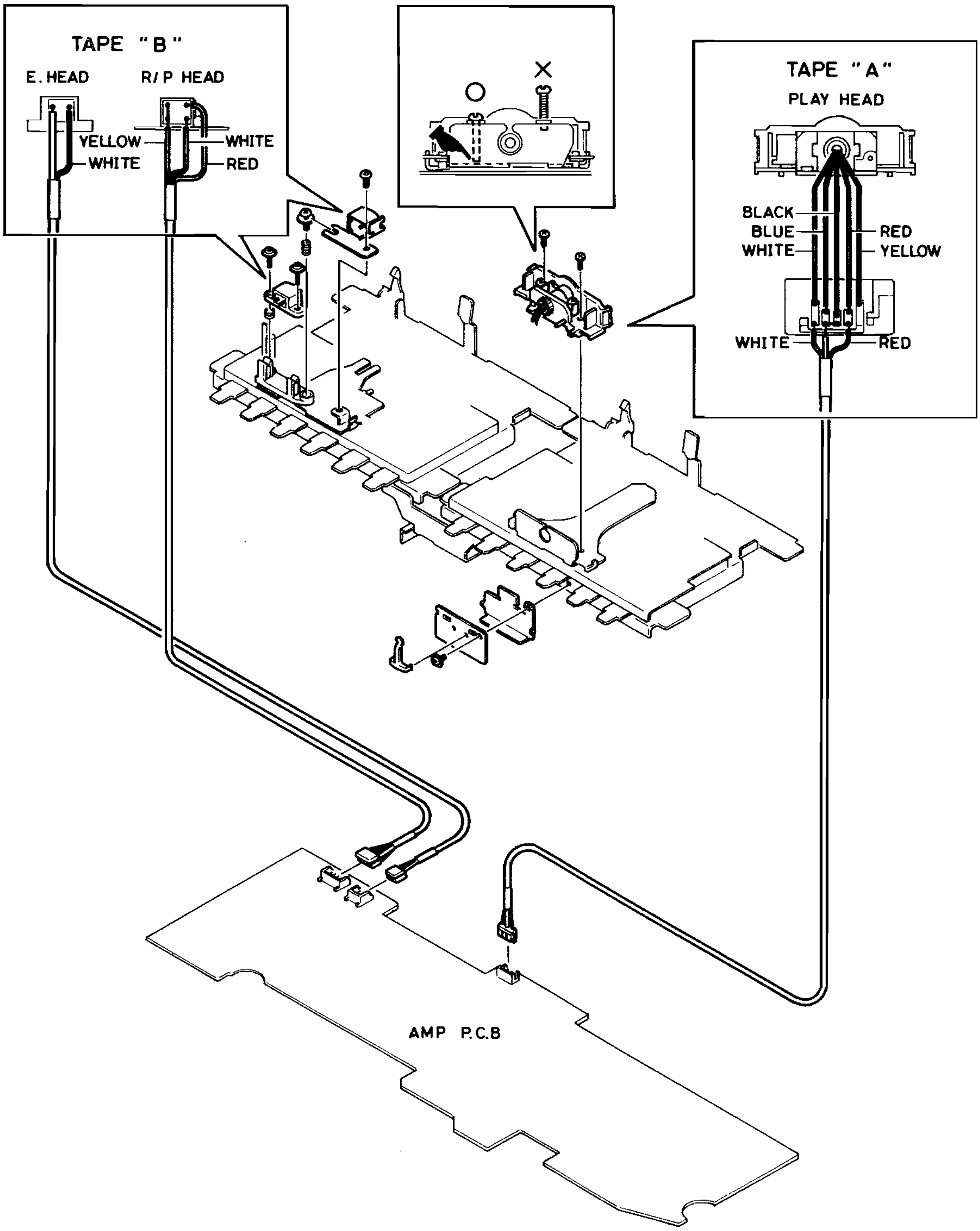
b. HEAD REPLACMENT AND AZIMUTH ADJUSTMENT

- After replacement, demagnetize the heads by using a head eraser.
- Be sure to clean the heads before attempting to make any adjustaments.
- Be sure both channels (1 and 2) are the same level (Using a dual-Phenomenon oscilloscope).

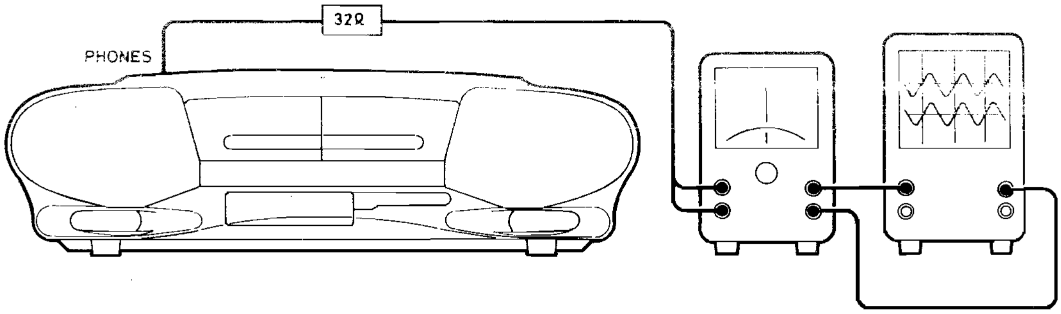
(a) Head replacement

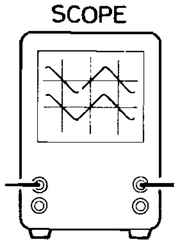
- After completion of the adjustment, use threadlock (TB-1401B) to secure the azimuth-adjustment screw.

Do not remove the loosened screw.


TAPE "B"
E. HEAD
R/P HEAD
YELLOW
WHITE
WHITE
RED
O
X
TAPE "A"
PLAY HEAD
BLACK
BLUE
WHITE
RED
YELLOW
WHITE
RED
AMP P.C.B

(b) Head azimuth adjustment





- Phase alignment

(1) Prepare a dual-phenomenon oscilloscope.
(2) Set so that the left and right ranges of the oscilloscope are the same.
(3) Play the test tape.
(4) Adjust so that the waveforms for the left and right channels are in alignment, as shown in the illustration.

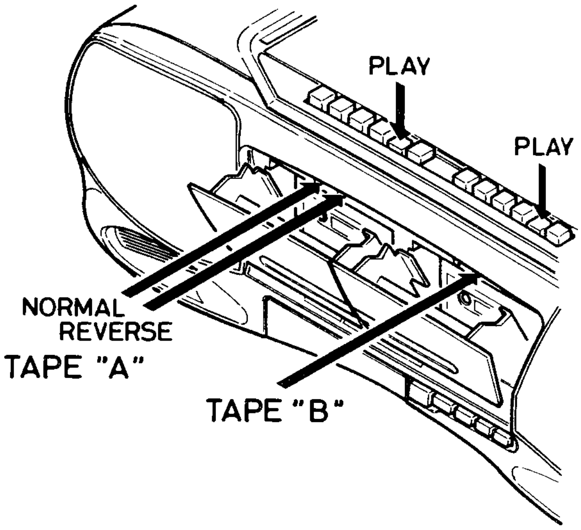
(c) Head azimuth adjustment

- TAPE "A"

(1) Load a test tape (VTT-703, etc.: 10 kHz) for azimuth adjustment.
(2) Press the PLAY button (normal playback).
(3) Use a flat-tip (−) screwdriver to turn the screw for normal azimuth adjustsment so that the left and right outputs are maximized at the same phase during normal playback.
(4) Press the tape direction lever.
(5) Play the tape in the reverse mode.
(6) Use a flat-to-(−) screwdiver to turn the screw for reverse azimuth adjustment so that the left and right outputs are maximized at the same phase during reverse playback.
(7) Press the STOP button

- TAPE "B"

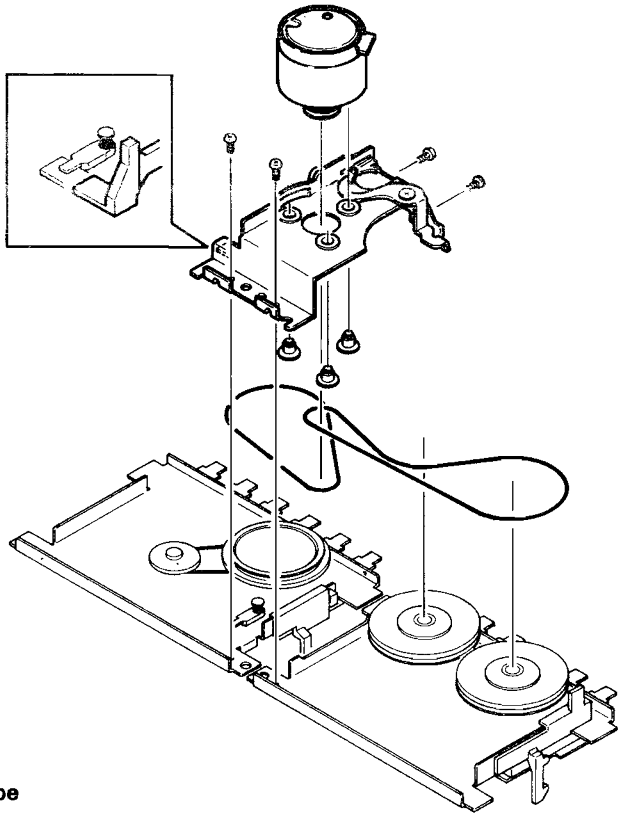
(1) Load a test tape for azimuth adjustment.
(2) Press the PLAY button.
(3) Use a flat-tip (−) screwdriver to turn the screw for normal azimuth adjustsment so that the left and right outputs are maximized at the same phase during normal playback.
(4) Press the STOP button.



- After making the adjustment, secure the azimuth adjustment screw by applying screw lock (TB-1401B).

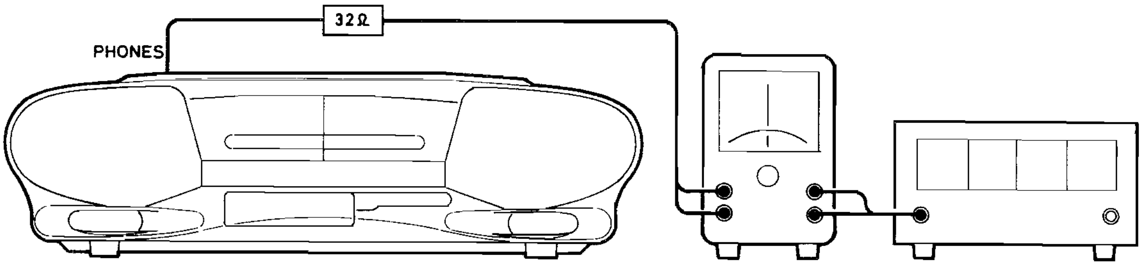
c. MOTOR REPLACEMENT AND SPEED ADJUSTMENT

(a) Motor replacement



(b) Motor speed adjustments

- **Use a plastic screwdriver for adjustment.**
- **Make the adjustment near where the test tape finishes winding.**

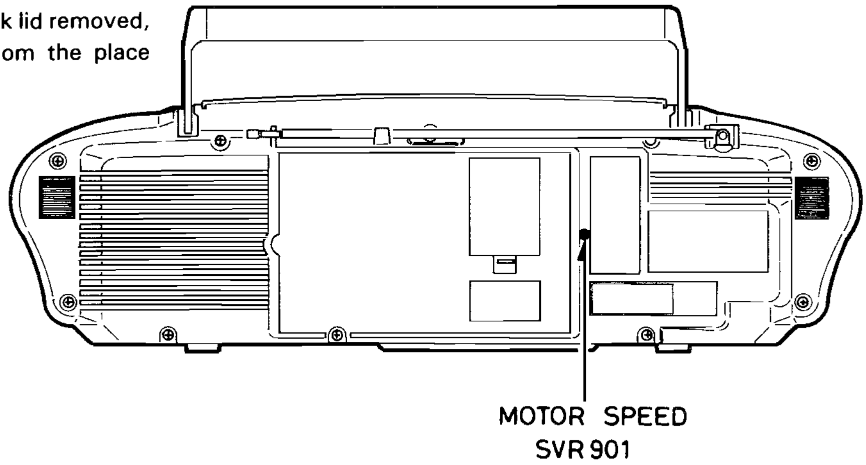


(1) Load a test tape (MTT-111, etc, 3000 Hz)

(2) Press the PLAY button.

(3) Use a flat-tip (−) screwdriver to turn the SVR (located inside the rear of the motor) to adjust so that the frequency counter becomes 3,000 Hz.

(4) If the adjustment is made with the back lid removed, insert the flat-tip (−) screwdriver from the place shown in the illustration.



- Note that the mechanism of the compact-disc player is very delicate.
- It is very important that the spindle motor (which rotates the disc), and the sled motor (which causes the disc signals to be tracked), as well as the gear and other components, operate smoothly, without eccentricity.
- When handling the pick-up, take care not to exert excessive force, and particular care should be taken not to touch the lens or the drive circuit's printed-circuit board pattern.

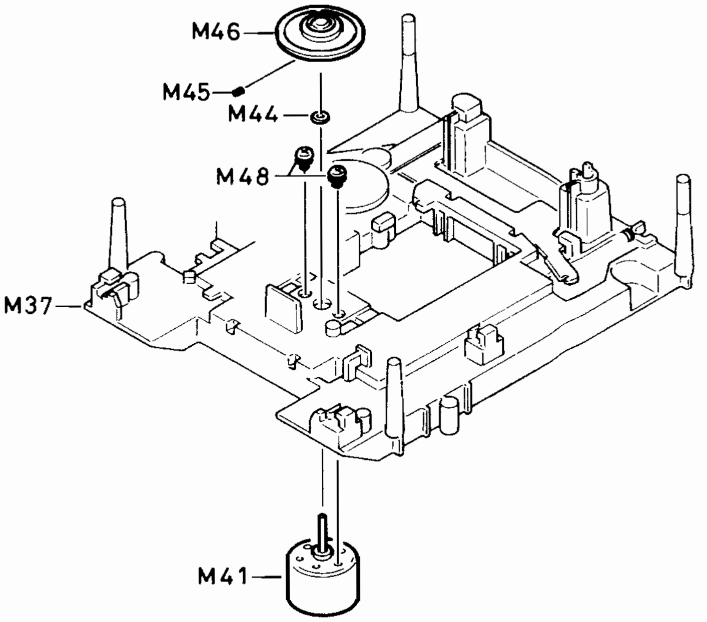
a. REMOVAL OF THE COMPACT-DISC PLAYER SECTION FROM THE UNIT (Refer to "Removal and installation" on page 5.)

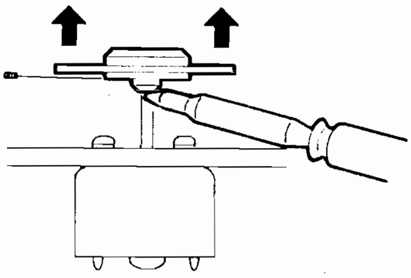
b. DISASSEMBLY OF THE COMPACT-DISC PLAYER MECHANISM

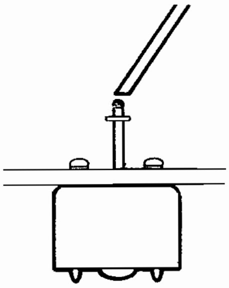
(a) Replacement of the spindle motor

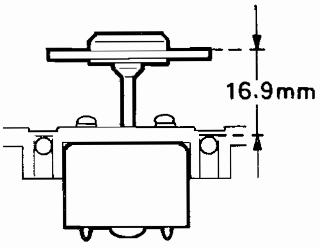
- Prepare dial-type calipers.

(1) Remove the screw (M45) that holds the turntable (M46).
(2) The attached bonding material can be dissolved by using a 60W soldering iron to heat the shaft at the lower part of the turntable for about one minute.
(3) The turntable can then be removed from the shaft by very carefully applying force upward at the center of the lower surface of the turntable.
(4) Remove the two screws (M48) and remove the spindle motor (M41).
(5) Attach the special washer (M44) to the spindle motor.
(6) Apply a small amount of a mixture of the "Three Bond 2001" and "2105F" bonding materials to the motor's shaft.
(7) Install the turntable as shown in the figure.
(8) Secure the turntable by pressing gently.
Be sure to wipe away (by using a piece of cloth, or similar material) any bonding material coming out of the hole.









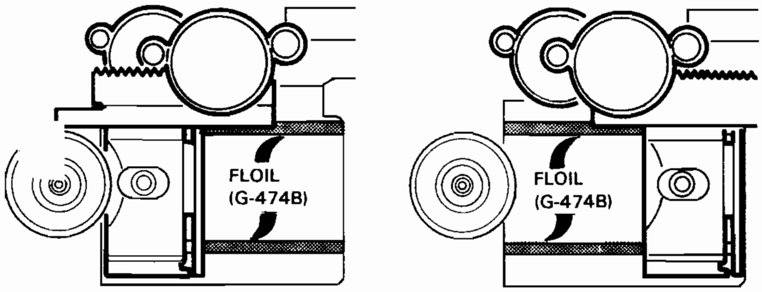
(b) Replacement and lubrication of the pick-up

(1) Before replacement of the pick-up, be sure to carefully read the section regarding the pick-up when the unit is moved or transported.

(2) Using a screwdriver or similar tool, carefully press (from the lower part of the chassis (M37), the latch for the two holes shown in the figure, and then remove the two pick-up rails (M43).

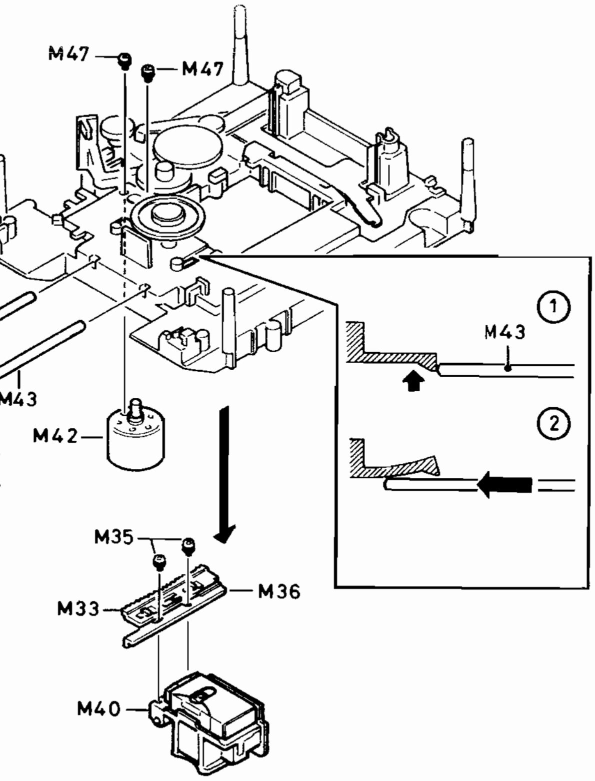
(3) If the pick-up is reconditioned or replaced, be sure to wipe the rails clean and also apply a coating of FLOIL (G-474B) to their entire circumference and entire length.

(BE SURE, AT THIS TIME, NOT TO TOUCH ANY OTHER PART.)


FLOIL
(G-474B)
FLOIL
(G-474B)

(c) Replacement of the sled motor.

(1) Remove the two pan-head screws that hold the motor, and then replace the motor.

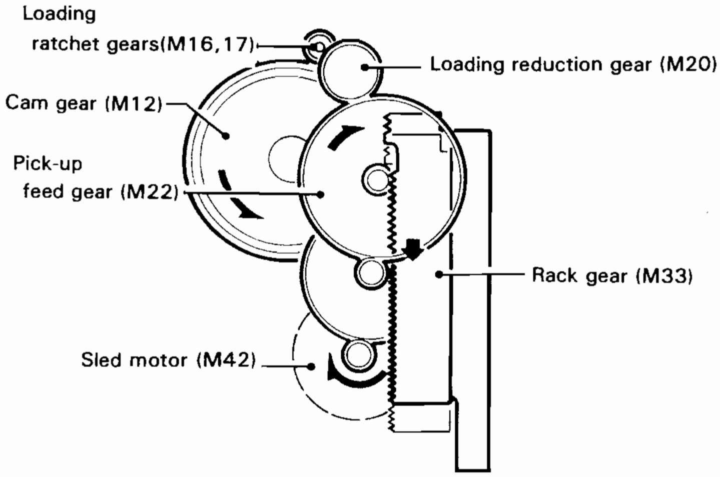

M47
M47
M37
M43
M43
M42
M35
M36
M33
M40
①
M43
②

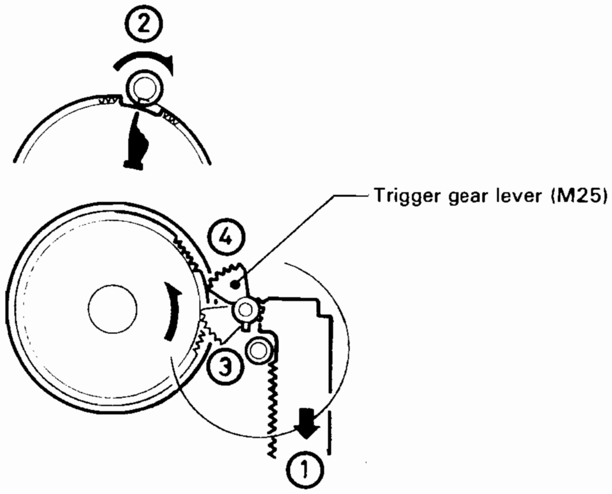
c. SLED MOTOR POWER TRAIN

When the OPEN/CLOSE switch (S526) on the front panel is pressed, the sled motor begins operation in the clockwise direction, and the interlocked pick-up feed gear (M22) causes the rack gear (M33) to move in the direction of the arrow.

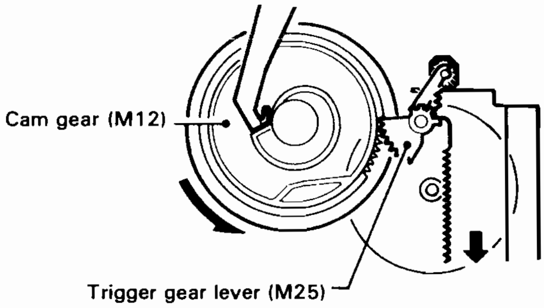
As a result of the movement of the rack gear activating the trigger gear lever (M25), the cam gear (M12) is also activated.

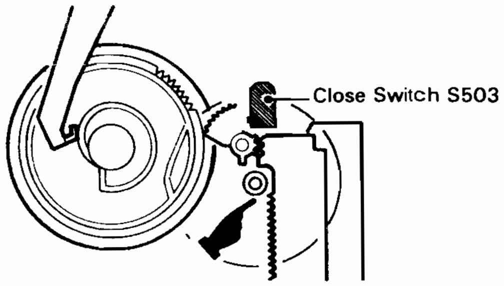
The pick-up feed gear reaches the loading reduction gear (M20), and the loading ratchet gears (M16 and M17) and the cam gear (M12) are caused to rotate.


Loading
ratchet gears(M16,17)
Loading reduction gear (M20)
Cam gear (M12)
Pick-up
feed gear (M22)
Rack gear (M33)
Sled motor (M42)

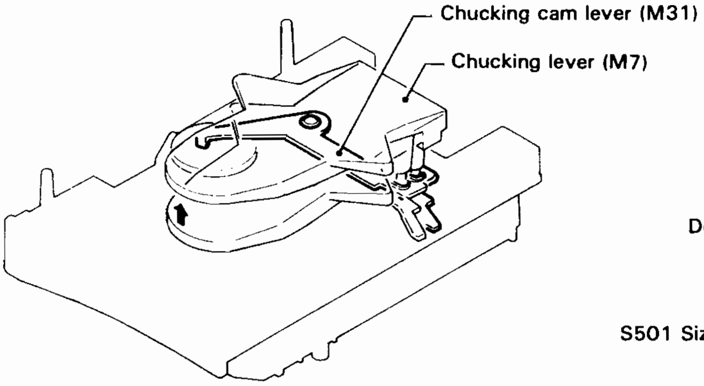

②
Trigger gear lever (M25)
④
③
①

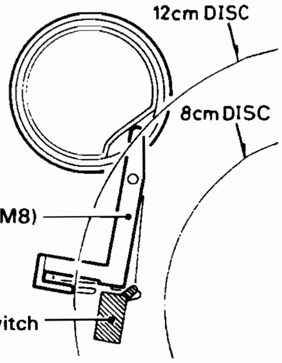
As a result of the rotation of the cam gear, the trigger gear lever is caused to move, and the pick-up feed gear and the rack gear separate.
The rotating cam gear operates as follows.


Cam gear (M12)
Trigger gear lever (M25)

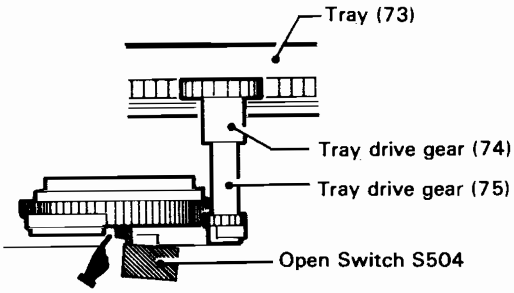

Close Switch S503

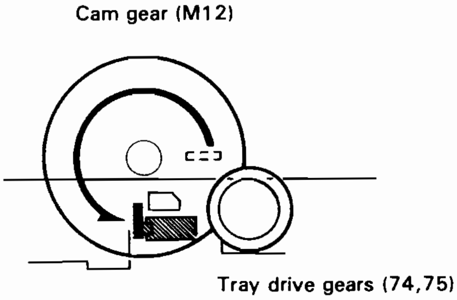
(a) The chucking cam lever (M31) is activated, thus changing the attitude of the chucking lever (M7) in preparation to accept the compact disc.
(b) The detection lever (M8) is activated, and the disc size is detected.


Chucking cam lever (M31)
Chucking lever (M7)


12cm DISC
8cm DISC
Detection lever (M8)
S501 Size-detection switch

(c) The tray and drive gears (74 and 75) are activated, and the tray slide assembly (73) opens.
(d) S504 is switched ON, and the tray slide assembly is stopped.


Tray (73)
Tray drive gear (74)
Tray drive gear (75)
Open Switch S504


Cam gear (M12)
Tray drive gears (74,75)

d. Checking the operation of the CD mechanism

(1) Disconnect the socket (for the sled motor power supply) from the printed-circuit board.

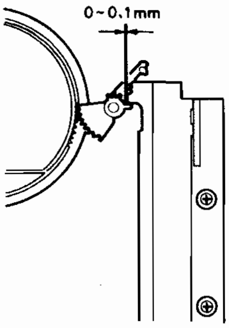
(2) Apply a voltage of DC 2.2V to the sled motor's terminal.

(3) Measure the current during sled motor operation.

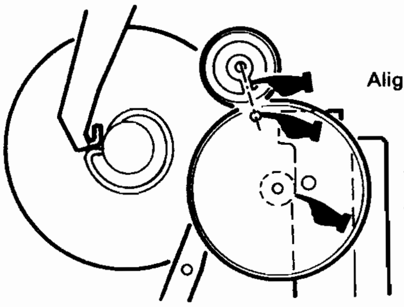
- The direction of movement of the pick-up (outer groove or inner groove) can be changed by changing the battery polarity.

Direction of pick-up movement	**Sled motor current**
Outer groove	8～20 mA or less
Inner groove	8～20 mA or less

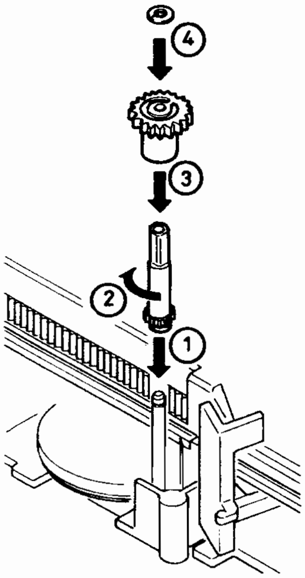
Pick-up feed rack gear installation dimensions

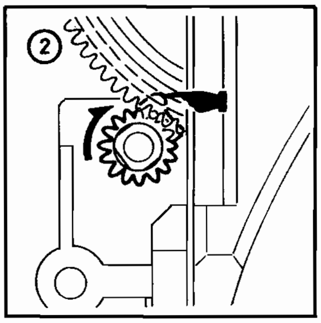


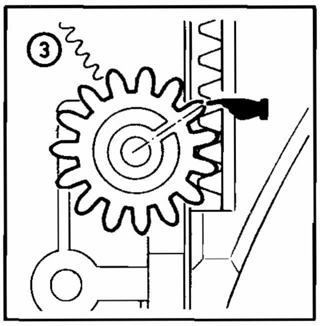
Installation of the pick-up feed gear


Align at the arrows.

The mark can be seen from the hole. Align the short tooth of the pinion with the first interval between teeth of the rack.





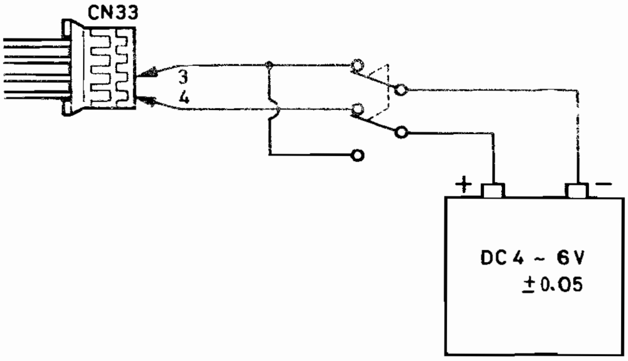


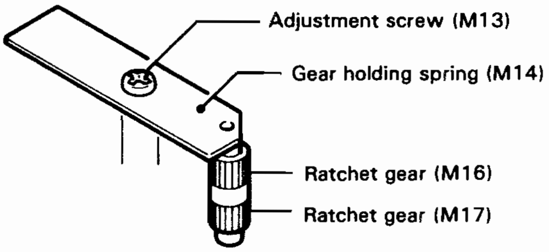
Align with the thired interval between teeth.

(d) Ratchet gear holding spring (M14) tension adjustment A loading ratchet gear is provided in order to protect the sled motor's power train.

- Have ready a DC power supply.

(1) Apply 4.6V; cut the power when the disc tray comes out half way.
(2) Loosen the adjustment screw to the extent that there is no tension at the spring plate.
(3) Apply 5V; the ratchet gear will close to the point where there is no ratcheting.
(4) Apply 4.6V; check to be sure that there is no ratcheting.
(5) Apply 5.3V; check to be sure that the ratchet gear moves three times or more. Secure the adjustment screw by using Cemedine #575 or a similar bond.
(6) Repeat steps (3) to (5) one or two times.

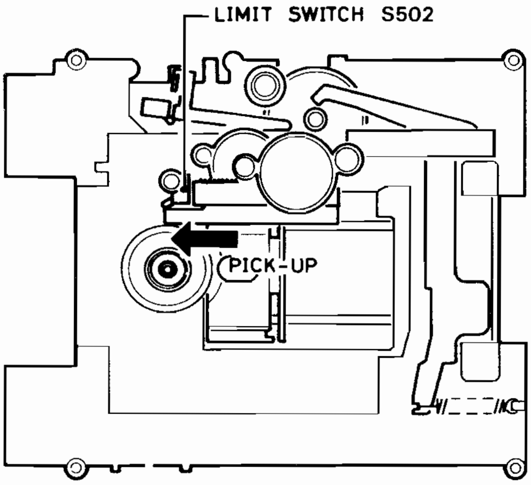

CN33
3
4
+
−
DC 4 ~ 6V
±0.05

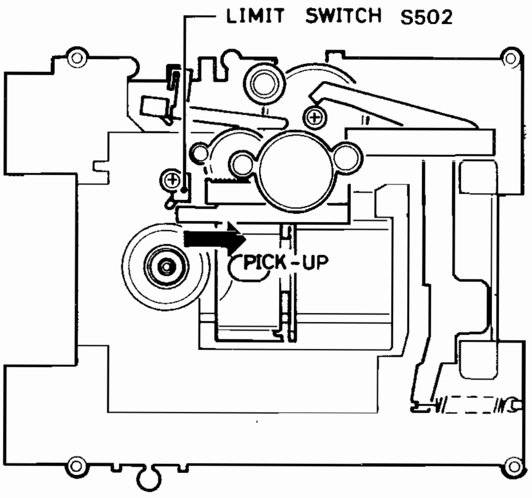

Adjustment screw (M13)
Gear holding spring (M14)
Ratchet gear (M16)
Ratchet gear (M17)

c. RESETTING THE PICK-UP TO THE HOME POSITION

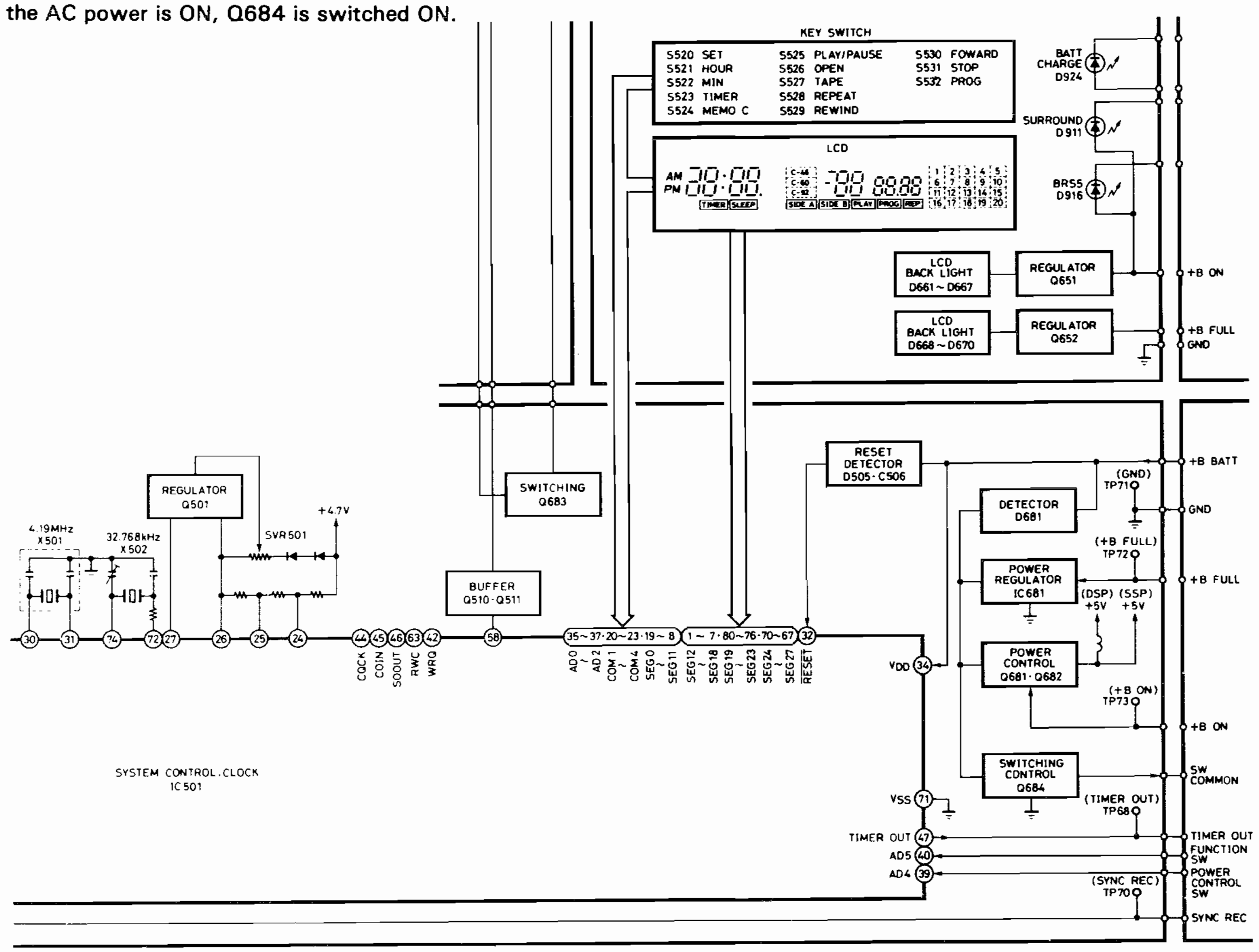
(a) The limit switch is switched ON by the projection of the rack gear secured to the returned pick-up, after which the sled motor continues to operate (by the circuit) for approximately 20~30 milliseconds; there is then again a reverse operation, and movement to the position at which the switch is switched OFF.

(b) Rotation continues for about 20~30 milliseconds after the switch is switched OFF, and then the pick-up stops at home position.


LIMIT SWITCH S502
PICK-UP

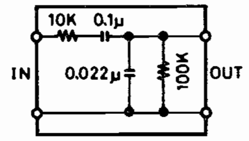
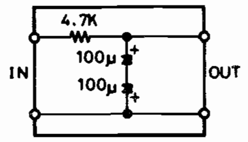
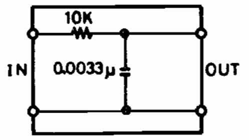

LIMIT SWITCH S502
PICK-UP

In the IC501 microcomputer there are, in addition to the compact disc player system control, the clock function and the FUNCTION switch function.
The determination of "ON", "OFF", "SLEEP", or "TIMER" is made according to the resistance value connected to IC501 pin (39) AD4. The determination of "CD" , "RADIO", "TAPE HIGH SPEED" or "TAPE NORMAL SPEED" is made according to the resistance value connected to pin (40) AD5.
The determination of the KEY input in made according to the resistance value connected to IC501 pins (35) – (37).
At the "CD" position, both X501 and X502 oscillate. At any position other than "CD" , X501 does not oscillate.
If the power back-up battery is loaded, transistor Q684 is switched OFF in order to reduce consumption of the battery.
If the AC power is ON, Q684 is switched ON.


KEY SWITCH
S520 SET
S521 HOUR
S522 MIN
S523 TIMER
S524 MEMO C
S525 PLAY/PAUSE
S526 OPEN
S527 TAPE
S528 REPEAT
S529 REWIND
S530 FOWARD
S531 STOP
S532 PROG
BATT CHARGE D924
SURROUND D911
BRS5 D916
LCD
LCD BACK LIGHT D661 ~ D667
REGULATOR Q651
LCD BACK LIGHT D668 ~ D670
REGULATOR Q652
+B ON
+B FULL
GND
RESET DETECTOR D505·C506
+B BATT
(GND) TP71
GND
DETECTOR D681
(+B FULL) TP72
+B FULL
POWER REGULATOR IC681
(DSP) (SSP) +5V +5V
POWER CONTROL Q681·Q682
(+B ON) TP73
+B ON
SWITCHING CONTROL Q684
SW COMMON
(TIMER OUT) TP68
TIMER OUT
FUNCTION SW
POWER CONTROL SW
(SYNC REC) TP70
SYNC REC
REGULATOR Q501
SWITCHING Q683
+4.7V
4.19MHz X501
32.768kHz X502
SVR501
BUFFER Q510·Q511
30 31 74 72 27 26 25 24 44 45 46 63 42 58
35~37·20~23·19~8
1 ~ 7·80~76·70~67
32
CQCK COIN SOOUT RWC WRQ
AD0 ~ AD2 COM1 ~ COM4 SEG0 ~ SEG11 SEG12 ~ SEG18 SEG19 ~ SEG23 SEG24 ~ SEG27 RESET
VDD 34
VSS 71
TIMER OUT 47
AD5 40
AD4 39
SYSTEM CONTROL.CLOCK IC501

a. PREPARATION FOR ADJUSTMENTS

(a) Measuring instruments, tools and filter
(1) Test disc : YEDS18 (Sony)
(2) Oscilloscope : SS5711 (100MHz or dual phenomenon)
or, Memoryscope : DSS6521 (Storagescope)
(3) Digital voltmeter (Input impedance 1MΩ or more)
(4) Oscillator (400Hz, 300mV RMS)
(5) Frequency counter (5MHz; or more)
(6) Screwdrivers (non-metallic) for adjustments.
(7) Filter
(8) Quartz timer
(9) P.C.B. assembly with extension cable
(614 209 3399)

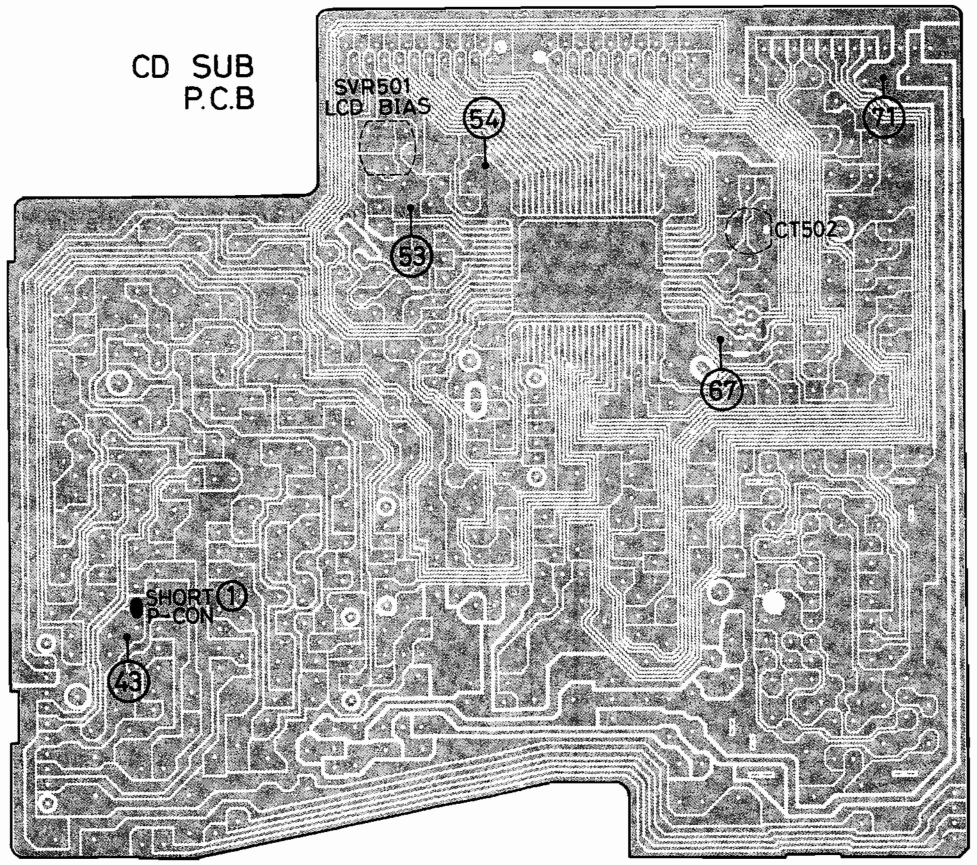
B. P. F. BAND PASS FILTER	 10K 0.1µ IN 0.022µ 100K OUT
L. P. F. 1 LOW PASS FILTER 1	 4.7K IN 100µ 100µ OUT
L. P. F. 2 LOW PASS FILTER 2	 10K IN 0.0033µ OUT

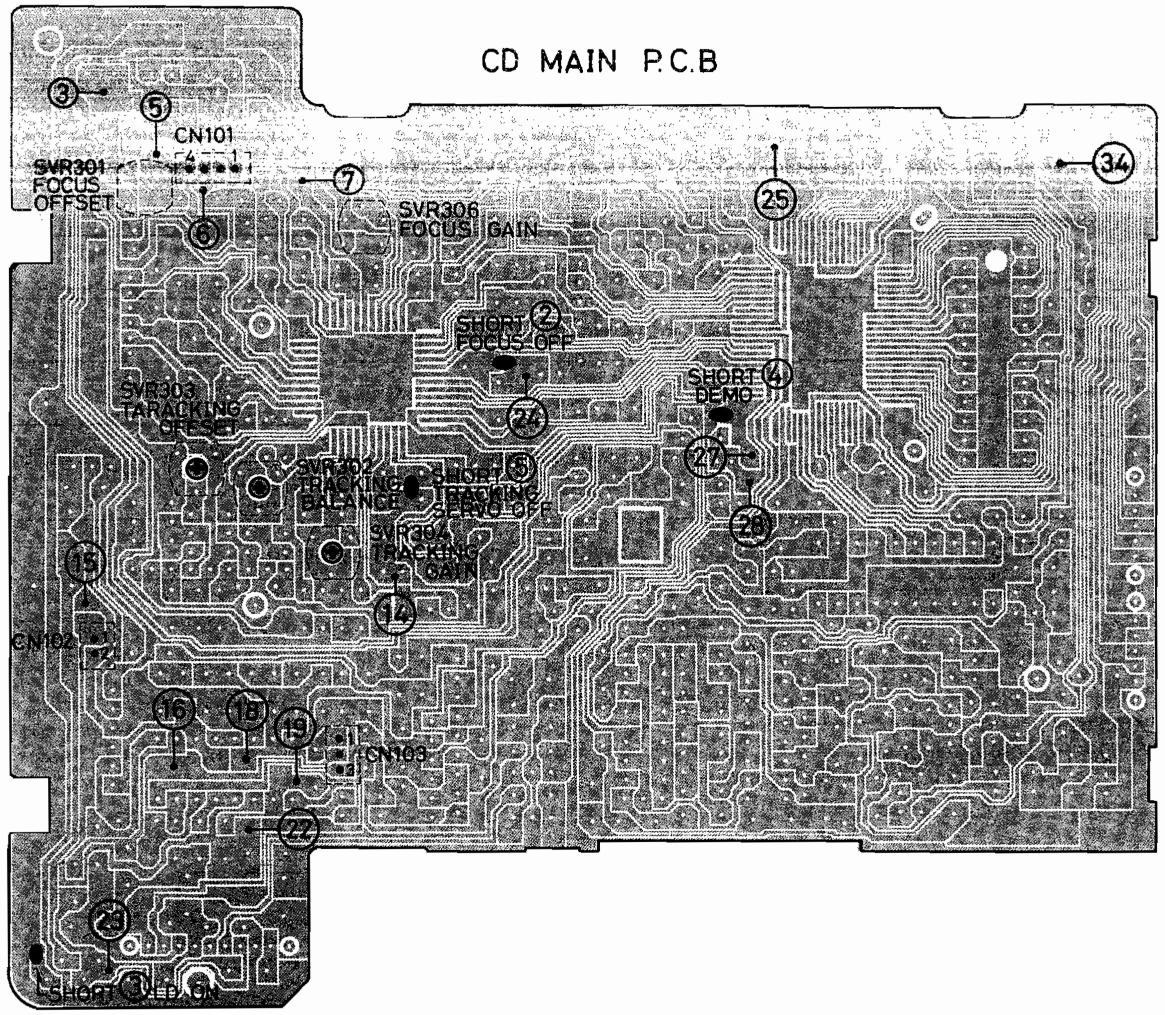
(b) Short-circuiting of printed-circuit board patterns
Test programming for servicing is not included in the IC501 programming. Circuits can be placed in the operational condition without going through the IC501 microcomputer, however, by using solder to short-circuit the following points.

Pattern to be short-circuited	Test point	Description
SHORT 1	TP43, GND	Cancels the IC402 muting.
SHORT 2	TP24, GND	Switches OFF the IC301 T OFF.
SHORT 3	TP23, GND	Cancels the IC401 muting.
SHORT 4	TP27, 5V	Switches ON the sound-emission function for the IC551 DEMO (demonstration) adjustment.
SHORT 5	TP14, VC 2.5V	Switches OFF the tracking servo.

b. PARTS LOCATION

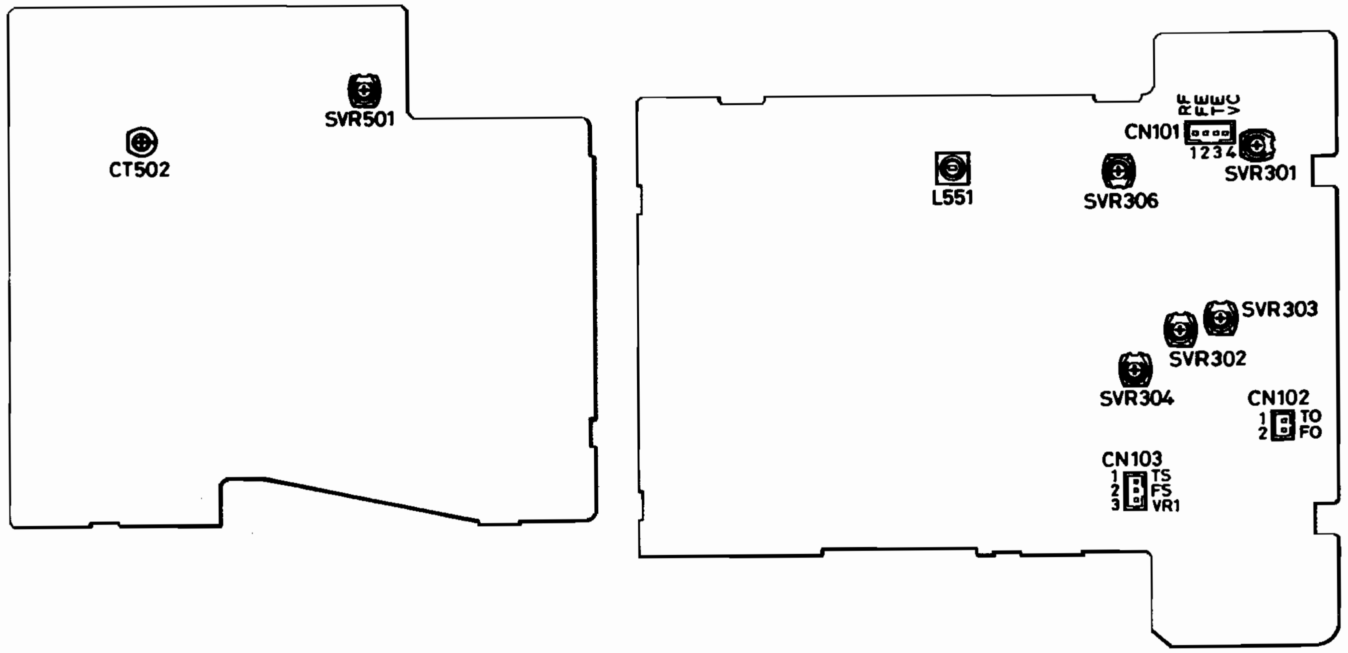
(a) Pattern test-point locations diagram


CD SUB P.C.B
SVR501 LCD BIAS
54
71
53
CT502
67
SHORT①
P-CON
43

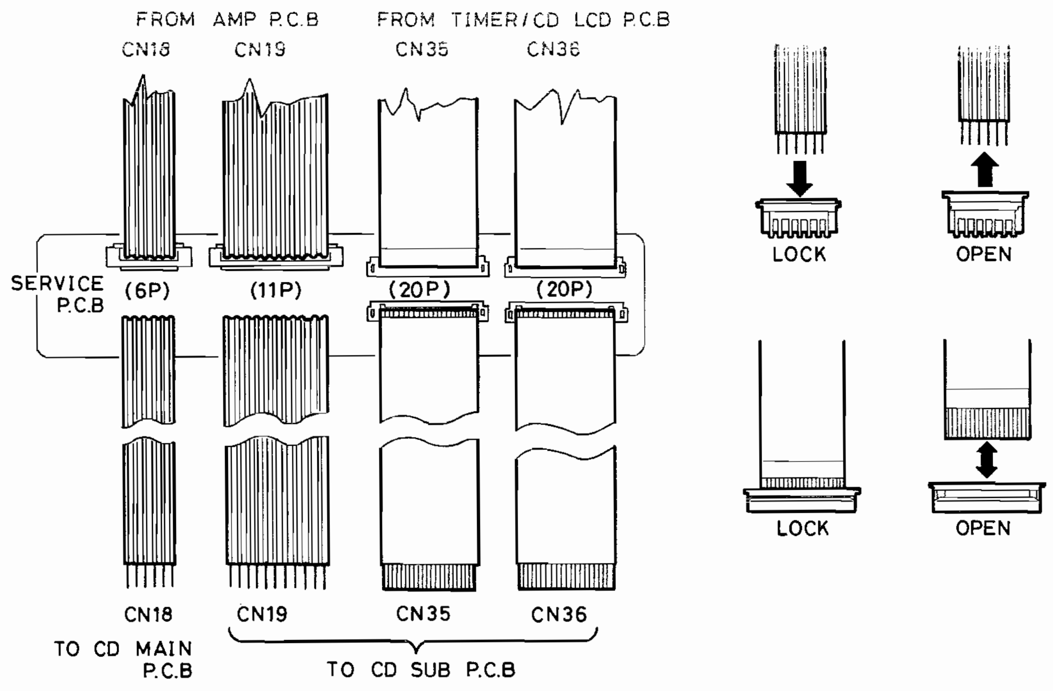

CD MAIN P.C.B
③
⑤
CN101
4
1
SVR301
FOCUS
OFFSET
⑥
⑦
SVR306
FOCUS GAIN
㉕
㉞
SHORT ②
FOCUS OFF
㉔
SHORT ④
DEMO
㉗
㉘
SVR303
TARACKING
OFFSET
SVR302
TRACKING
BALANCE
SHORT ⑤
TRACKING
SERVO OFF
SVR304
TRACKING
GAIN
⑭
⑮
CN102
⑯
⑱
⑲
CN103
㉒
㉓
SHORT ③ LD ON

(b) **Component locations diagram**

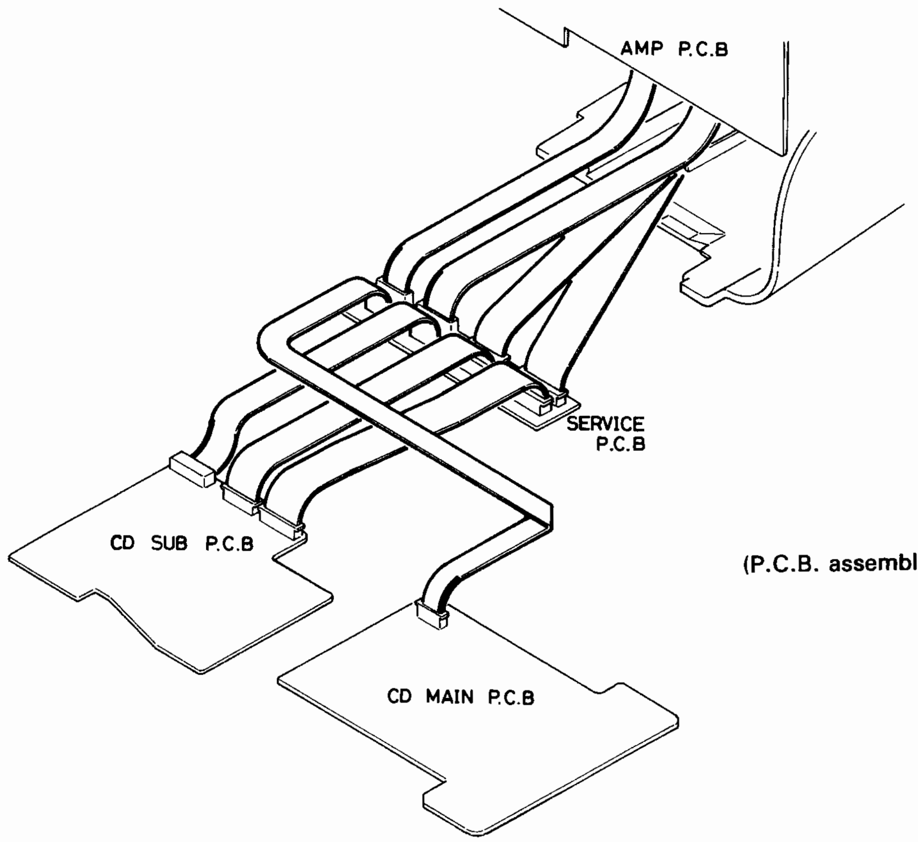
- **Connections are made to actual test points by using connectors CN101,102 and 103. Work can be simplified by preparing adapting connectors.**


CT502
SVR501
L551
SVR306
RF
FE
TE
VC
CN101
1234
SVR301
SVR303
SVR302
SVR304
CN102
1
2
TO
FO
CN103
1
2
3
TS
FS
VR1

P.C.B. assembly with extension cable


FROM AMP P.C.B
CN18
CN19
FROM TIMER/CD LCD P.C.B
CN35
CN36
SERVICE
P.C.B
(6P)
(11P)
(20P)
(20P)
CN18
CN19
CN35
CN36
TO CD MAIN
P.C.B
TO CD SUB P.C.B
LOCK
OPEN
LOCK
OPEN

Connection of the P.C.B. assembly with extension cable


AMP P.C.B
SERVICE
P.C.B
CD SUB P.C.B
CD MAIN P.C.B

(P.C.B. assembly with extension cable)

c. COMPACT-DISC PLAYER ADJUSTMENTS AND DESCRIPTIONS

No.	Item	Description
(a)	PLL VCO free-run adjustment	The rotational speed of the spindle motor is locked so as to become fixed to the linear velocity. In order to unlock this lock, the circuit condition is brought to the center of the stabilized range.
(b)	Tracking balance adjustment	Adjusts so that the outputs of the sub spots (at the front and rear of the pick-up's main spot) are equivalent. As a result of the outputs of the sub spots being equivalent, the position of the main spot comes to the center of the disc's track.
(c) (d)	Focus gain adjustment Tracking gain adjustment	These adjustments are made to compensate for the strength of the pick-up's laser beams and for dispersion irregularities of the light receptor's circuit.
(e)	Focus offset adjustment	The focus servo is stabilized when the circuit's offset voltage is in the same condition as when the objective lens agrees with the focal distance.
(f)	Tracking offset adjustment	The tracking servo is stabilized when the circuit's offset voltage is in the same condition as when the objective lens is at the mechanical center.

d. ADJUSTMENTS

(a) PLL VCO free-run adjustment

(1) Short-circuit points 1~3 on the printed-circuit board.

(2) Connect a frequency counter to the test points.

(3) Switch ON the unit's power.

(4) Eject the disc tray from the unit.

(5) Adjust L551 so that the reading of the frequency counter is 4.290 MHz.

Measuring instrument	Test disc	Short-circuit location	Input connection point	Output connection point	Adjustment location	Adjustment value
Frequency counter	—	SHORT 1 ~ SHORT 3	—	TP28(PLCK), TP25(GND)	L551	4.290MHz ±0.005MHz

(b) Tracking balance adjustment

(1) Add the printed-circuit board short-circuit points 4 and 5.

(2) Connect an oscilloscope to the test point.

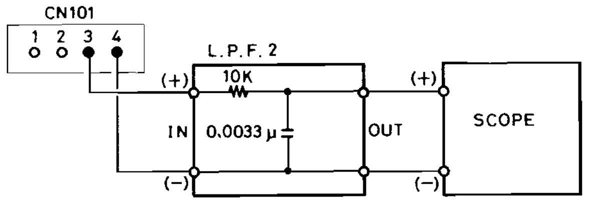
(3) Switch ON the unit's power.

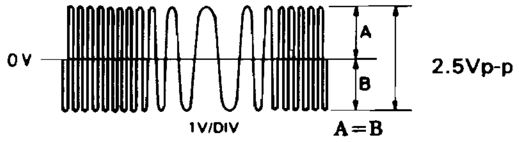
(4) Load the test disc.

(5) Adjust SVR302 so that the oscilloscope's waveform is symmetrical, as shown in the illustration.

(6) Cancel the short-circuiting of only short-circuit point 5 on the printed-circuit board.

(7) The tracking servo will be switched ON, and the disc will change to the PLAY mode.





Measuring instrument	Test disc	Short-circuit location	Input connection point	Output connection point	Adjustment location	Adjustment value
Oscilloscope and low pass filter 2	YEDS18	SHORT 1 ~ SHORT 5	—	CN101③,④ TP6:TE TP5:VC2.5V	SVR302	Waveform symmetry A = B

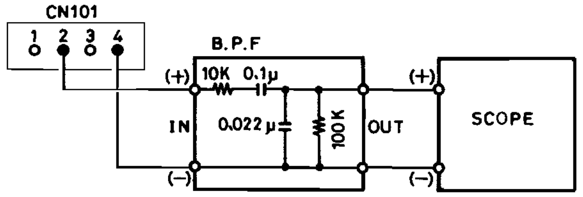
(c) Focus gain adjustment

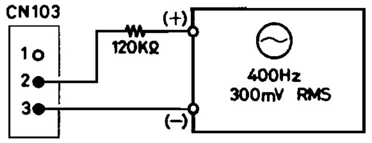
(1) Check short-circuit points 1~4. Because the mode is the DEMO mode, load the disc, switch ON the power, and play the disc.

(2) Connect, as shown in the figure, a 120-kilohm resistor to the low-frequency oscillator (400 Hz, 300 mV, RMS), and then connect to the test point.

(3) Connect an oscilloscope to the test point.

(4) Adjust SVR306 so that the oscilloscope's waveform is 600 mVp-p.





Measuring instrument	Test disc	Short-circuit location	Input connection point	Output connection point	Adjustment location	Adjustment value
Memory scope Oscilloscope Oscillator and bandpass filter	YEDS18	SHORT 1 ~ SHORT 4	CN103②,③ TP18:FS TP16:VR1	CN101②,④ TP7:FE TP5:VC2.5V	SVR306	600mVp-p

(d) Tracking gain adjustment

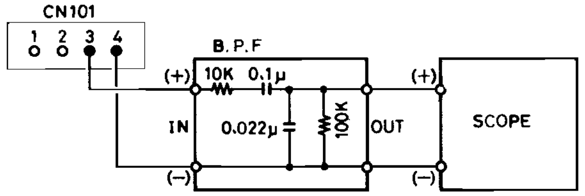
(1) Check the printed-circuit board short-circuit points 1-4.

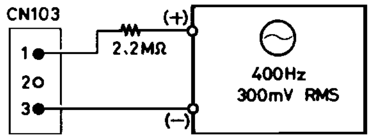
(2) Load the disc, switch ON the power, and play the disc.

(3) Connect, as shown in the illustration, a resistance (2.2 M Ω) to a low-frequency oscillator, and connect to the test point.

(4) Connect an oscilloscope to the test point.

(5) Adjust SVR304 so that the oscilloscope's waveform is 300mVp-p.

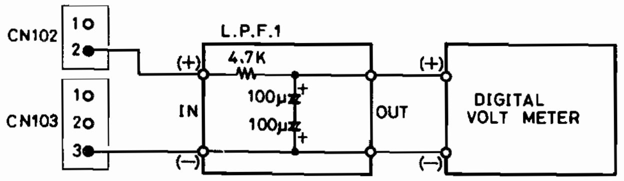




Measuring instrument	Test disc	Short-circuit location	Input connection point	Output connection point	Adjustment location	Adjustment value
Memory scope Oscilloscope Oscillator and bandpass filter	YEDS 18	SHORT 1 ~ SHORT 4	CN103①,③ TP19:TS TP16:VR1	CN101③,④ TP6:TE TP5:VC2.5V	SVR304	300mVp-p

(e) Focus offset adjustment

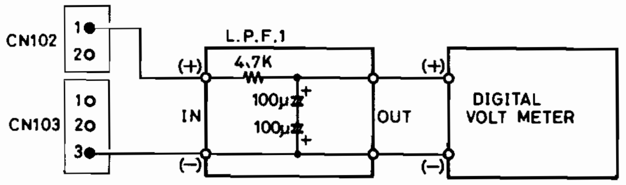
(1) Check short-circuit points 1-4.
(2) Load the disc, switch ON the power, and play the disc.
(3) Connect a digital voltmeter. Record the DC offset voltage read-out at this time.
(4) Switch OFF the power.
(5) Remove the test disc from the unit.
(6) Cancel the short-circuiting of only short-circuit point 4 on the printed-circuit board.
(7) Switch ON the unit's power.
(8) Adjust SVR301 so that the voltage of the digital voltmeter after focus search is the same value as the value measured in step (3).



Measuring instrument	Test disc	Short-circuit location	Input connection point	Output connection point	Adjustment location	Adjustment value
Oscilloscope Digital voltmeter and low pass filter 1	YEDS 18	SHORT 1 ~ SHORT 4	———	CN102② CN103③ TP15:FO TP16:VR1	SVR301	Voltage during PLAY and voltage during STOP = same voltage value (±10mV)

(f) Tracking offset adjustment

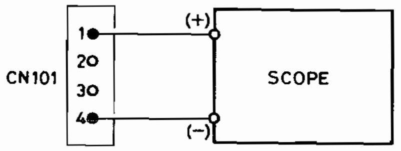
(1) Continue from step (8) above of "Focus offset adjustment".
(2) Connect a digital voltmeter.
(3) Adjust SVR303 so that the digital voltmeter reading becomes 0 mV ±10 mV.
(4) Cancel all printed-circuit board short-circuit points.

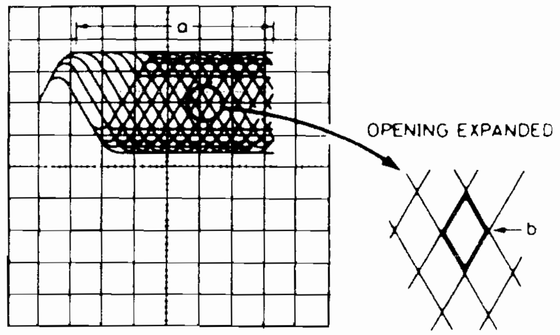


Measuring instrument	Test disc	Short-circuit location	Input connection point	Output connection point	Adjustment location	Adjustment value
Digital voltmeter and low pass filter 1	———	SHORT 1 ~ SHORT 3	———	CN103③ CN102① TP22:TO TP16:VR1	SVR303	0mV±10mV

(g) Checking the eye pattern

The adjustments (a) - (f) complete the adjustments of the compact-disc player. Next, check the eye pattern waveform.





Measuring instrument	Test disc	Output connection point	"Eye" pattern
Oscilloscope	YEDS 18	CN101 ① ④, TP3 : RF TP5:VC2.5V	• Check to be sure that the "eye" pattern is at the center of the waveform and that the diamond shape is clearly defined.

(h) LCD bias voltage adjustment

Adjust the bias voltage so that the bringhtness of the LCD indications is optimized.

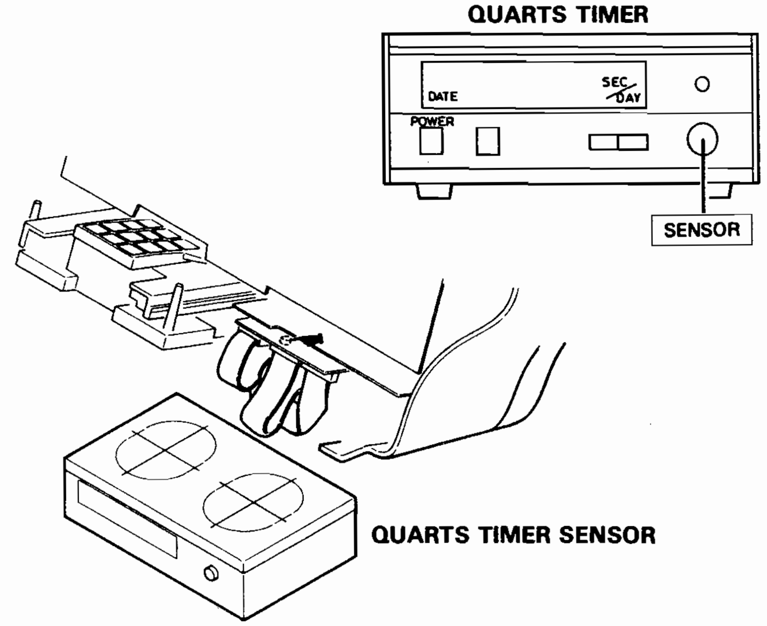
(1) Connect a DC voltmeter to the test point.
(2) Switch ON the unit's power.
(3) Adjust SVR501 so that the voltmeter reading is 3.05 ± 0.2V.

Measuring instrument	Output connection point	Adjustment location	Adjustment value
DC Voltmeter	TP54, TP53	SVR501	3.05±0.2V

(i) Checking the audio timer's time discrepany

Because the time discrepancy changes according to the room temperature, the adjustment should be made at a temperature of 25℃.

(1) Switch ON the unit's power.
(2) Bring the FFC (flexible flat cable) of the LCD board close to the quartz timr's sensor.
(3) The quartz timer will indicate the timer's time discrepancy.
(4) Check to be sure that the indication of the quartz timer is within the range of +0.25 ~ +0.15 sec./day.
(5) If the indication of the quartz timer is not within the range of +0.25 ~ +0.15 sec./day, turn the CT502 trimmer to adjust.



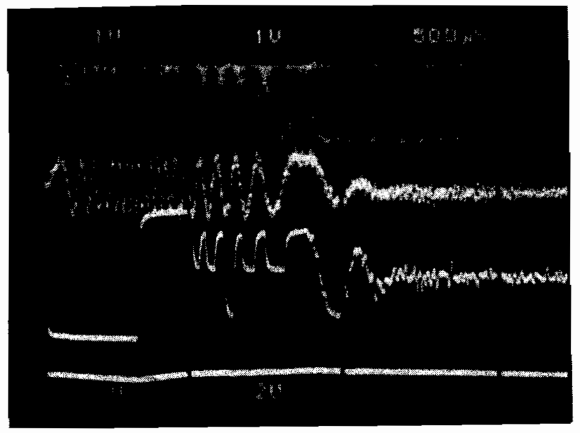
Measuring instrument	Adjustment location	Adjustment value
Quartz timer	CT502	+0.25~+0.15V SEC/DAY

e. TEST POINT WAVEFORMS

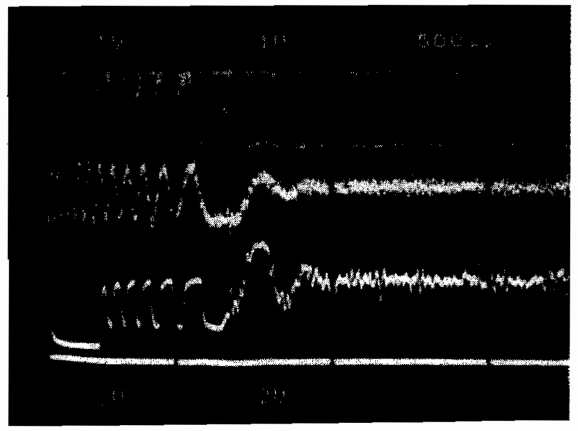
These are the standard waveforms for the test points.

TP22 (TEO) : Pick-up tracking coil drive voltage
TP13 (SLO) : Sled motor drive voltage

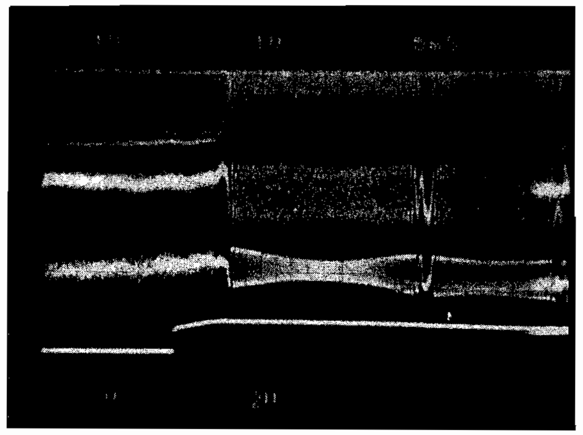
MODE : BACK SEARCH
TP3,TP6,TP22,TP45
GND : TP5 (VC2.5V)
V1,V3 1V/div
V2,V4 2V/div H : 500μsec/div



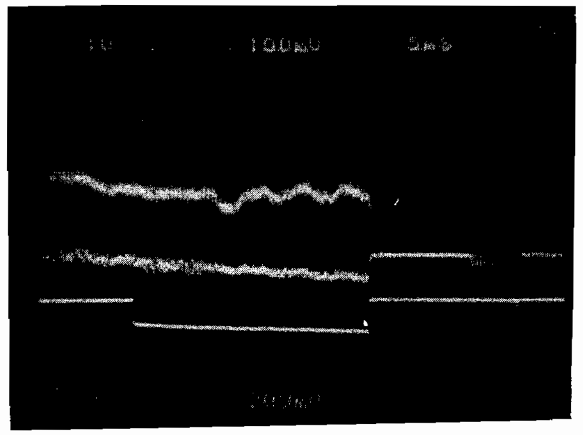
MODE : FWD SEARCH
TP3,TP6,TP22,TP45
GND : TP5 (VC 2.5V)
V1, V3 1V/div
V2, V4 2V/div H : 500μsec/div



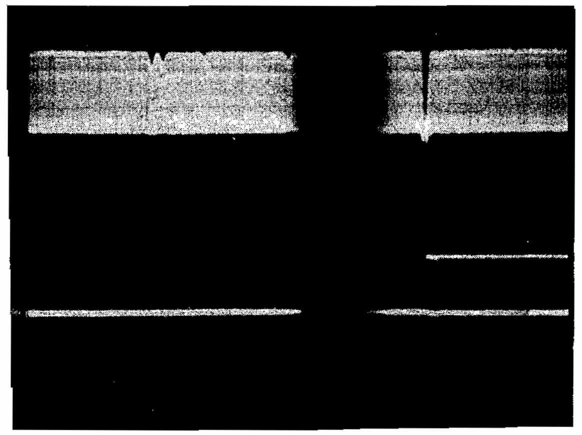
MODE : BACK SKIP
TP3,TP6,TP22,TP45
GND : TP5 (VC2.5V)
V1,V3 1V/div
V2,V4 2V/div H : 5m sec/div



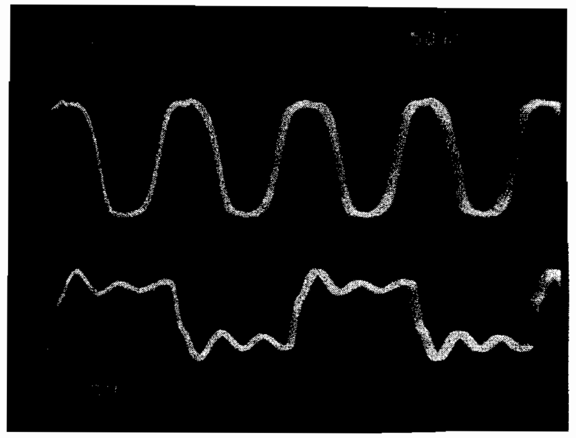
MODE : FWD SKIP
TP3,TP6,TP22,TP45
GND : TP5 (VC2.5V)
V1, V3 1V/div
V2, V4 2V/div H : 5m sec/div



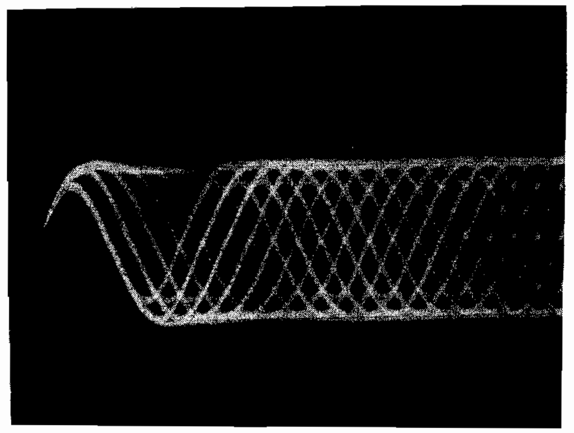
TP36 (EFLG) : Error flag.
MODE : PLAY (ERROR DISC)
TP3,TP36
GND : TP25 (GND)
V1 : 1V/div
V2 : 5V/div H : 5m sec/div



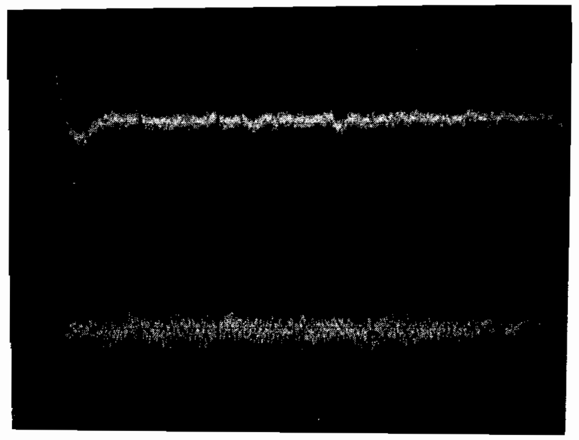
TP28 (PLCK) : PLL Clock pulse check terminal
MODE : PLAY
IC551②,TP28
GND : TP25 (GND)
V1 : 2V/div
V2 : 5V/div H : 50n sec/div



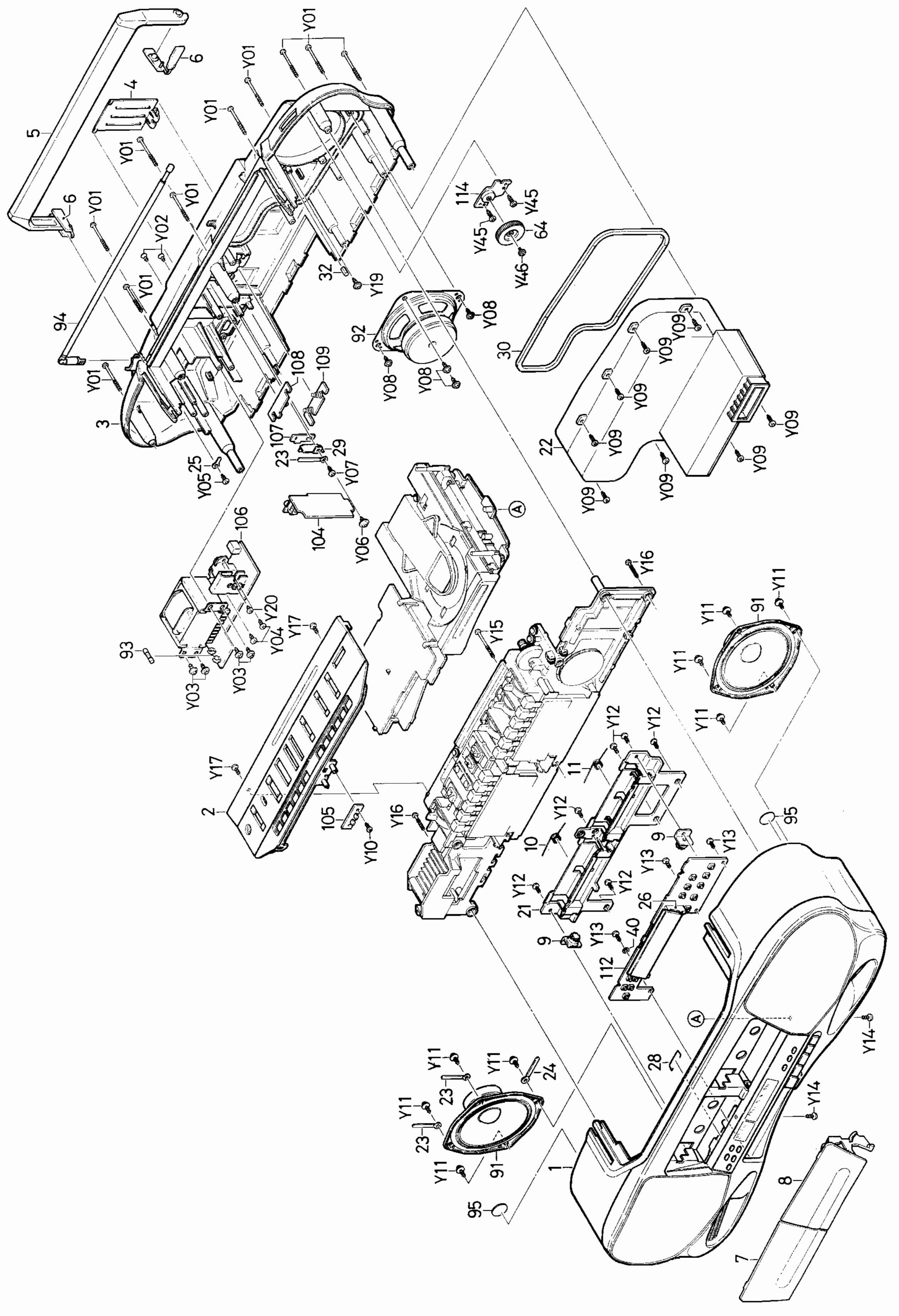
MODE : PLAY
TP3 (RF)
GND TP5 (VC2.5V)
V : 500mV/div H : 500n sec/div



MODE : PAUSE
TP7,TP6
GND : TP5 (VC 2.5V)
V1 : 500mV/div
V2 : 1V/div H : 1m sec/div



EXPLODED VIEW (CABINET & CHASSIS ①)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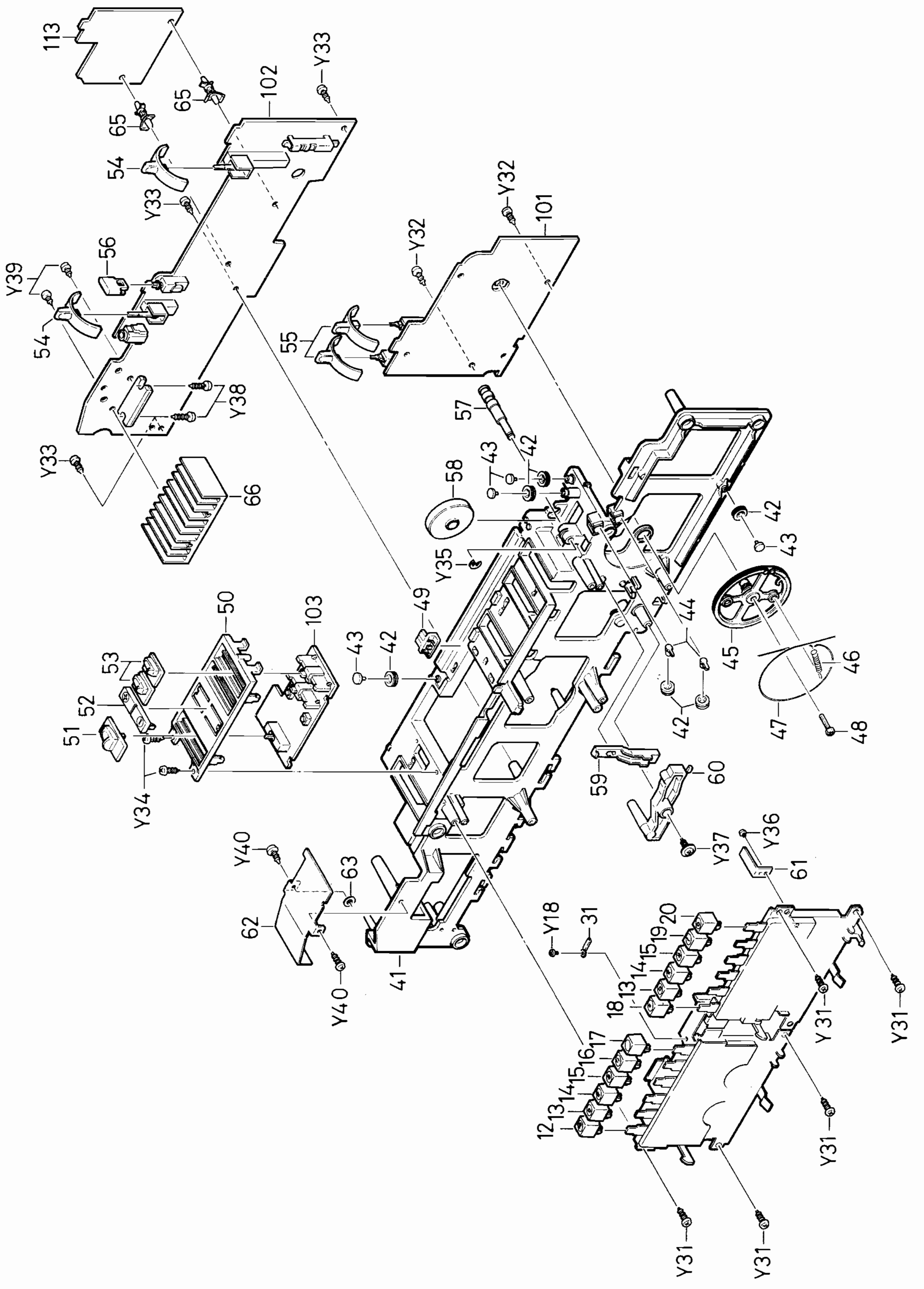
Y45
Y46

EXPLODED VIEW (CABINET & CHASSIS ②)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60
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62
63
65
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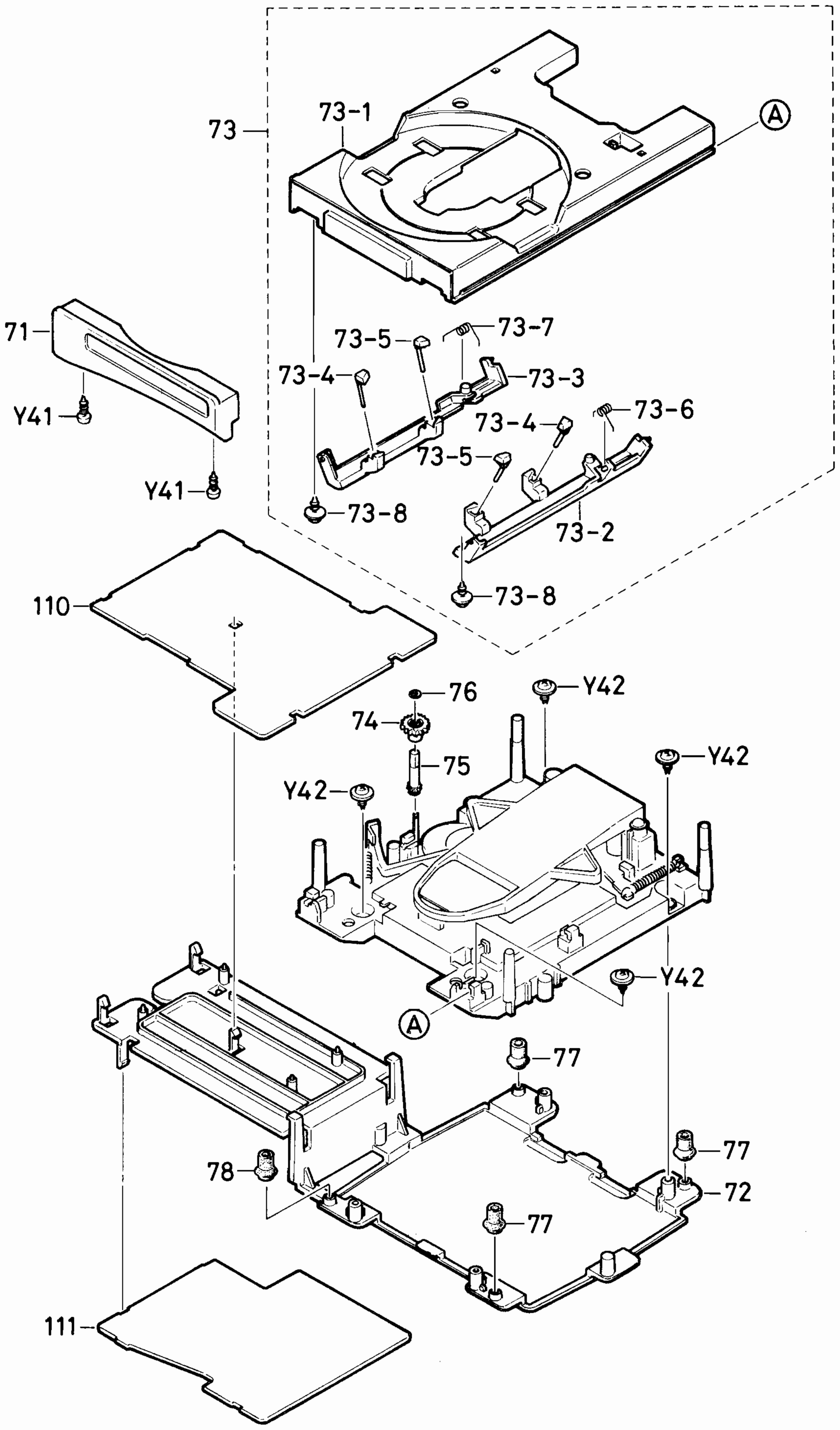
101
102
103
113
Y18
Y31
Y32
Y33
Y34
Y35
Y36
Y37
Y38
Y39
Y40

EXPLODED VIEW (CD)



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION : Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	614 208 1204	INNER CARTON
	614 203 0264	FOAM PLASTIC CASE, TOP, LEFT/RIGHT
	614 203 0271	FOAM PLASTIC CASE, BOTTOM, LEFT/RIGHT
	614 208 6087	POLY COVER, 850X500MM, SET
	614 208 6094	SHEET, 300X1700MM, SET
	614 208 1587	INSTRUCTION MANUAL
	614 207 4381	LABEL, CAUTION, BATTERY
	⚠ 614 022 2128	POWER CORD, AC
or	⚠ 614 022 2678	POWER CORD, AC
or	⚠ 614 022 2692	POWER CORD, AC
	⚠ 614 016 0659	SOCKET, AC POWER CORD MTG.
or	⚠ 614 016 4541	PLUG ASSY, AC POWER CORD MTG.

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 205 8428	CABINET ASSY
2	614 208 1259	DECK PANEL ASSY
3	614 208 1280	BACK LID ASSY
4	614 198 9976	BATTERY LID, TIMER
5	614 208 7374	HANDLE ASSY
6	614 194 8089	BRACKET HANDLE
7	614 205 8473	TOP LID ASSY, LEFT, TAPE "A"
8	614 205 8480	TOP LID ASSY, RIGHT, TAPE "B"
9	614 069 0378	GEAR ASSY, TOP LID
10	614 204 9297	SPRING WIRE, TOP LID "A"
11	614 199 0590	SPRING WIRE, TOP LID "B"
12	614 199 0231	PUSH BUTTON, DIRECTION, TAPE "A"
13	614 199 0248	PUSH BUTTON, STOP/EJECT, TAPE "A" & "B"
14	614 199 0255	PUSH BUTTON, F.FWD, TAPE "A" & "B"
15	614 199 0262	PUSH BUTTON, REW, TAPE "A" & "B"
16	614 199 0279	PUSH BUTTON, PLAY, TAPE "A"
17	614 199 0286	PUSH BUTTON, MODE, TAPE "A"
18	614 199 0309	PUSH BUTTON, PAUSE, TAPE "B"
19	614 204 0478	PUSH BUTTON, PLAY, TAPE "B"
20	614 199 0293	PUSH BUTTON, RECORD, TAPE "B"
21	614 199 0385	BRACKET, CASSETTE LID
22	614 203 2374	BRACKET ASSY, WOOFER SPEAKER
23	614 129 9136	LUG, LEAD MTG.
24	614 130 0382	LUG, SPEAKER LEAD MTG.
25	614 051 9785	LUG, ROD ANTENNA
26	614 199 0392	BRACKET, LCD MTG.
28	614 204 8429	SPRING WIRE, CABINET, LEAD MTG.
29	614 204 5954	BRACKET, BATTERY MTG.
30	614 199 0507	RUBBER CUSHION, EBSS, WOOFER SPEAKER
31	614 129 9341	LUG, MECHANISM LEAD MTG.
32	614 204 0492	SHAFT, BATTERY MTG.
40	412 011 6009	SPECIAL WASHER, 3X8X0.5MM
41	614 199 0453	CHASSIS
42	614 135 5702	PULLEY, DIAL CORD
43	614 199 0538	PIN, PULLEY MTG.
44	614 204 6449	PIN, PULLEY MTG.
45	614 132 3527	DRUM, TUNING
46	614 146 8778	SPRING COIL, DIAL CORD
47	614 118 5590	ROPE, 0.3MM, DIAL CORD
48	411 098 7206	BOLT HEX C-SCT 2.6X14MM, DRUM MTG.
49	614 199 0545	POINTER
50	614 202 3969	BRACKET RESISTOR, VOLUME P.C.B MTG.
51	614 208 3543	SLIDE KNOB, EBSS SWITCH
52	614 202 3938	PUSH BUTTON, VOLUME (UP/DOWN)
53	614 208 3550	SLIDE KNOB, TREBLE/BASS
54	614 194 7822	LEVER KNOB, FUNCTION/POWER
55	614 199 0118	LEVER KNOB, BAND/FM MODE
56	614 204 0461	PUSH BUTTON, SURROUND
57	614 199 0552	TUNING SHAFT
58	614 201 8767	ROTARY KNOB, TUNING
59	614 199 0569	SLIDE, RECORD/PLAY
60	614 199 0576	LEVER, RECORD/PLAY
61	614 201 8798	SPRING PLATE, RECORD/PLAY
62	614 205 1214	COVER, HEAT SINK
63	412 011 6009	SPECIAL WASHER, 3X8X0.5MM, CONER MTG.
64	614 105 6210	ROTARY KNOB, FINE TUNING
65	614 204 2809	BRACKET, ELECTRICAL VOLUME P.C.BOARD
71	614 205 4437	FRONT PANEL, CD TRAY
72	614 205 1740	BOTTOM LID ASSY, CD
73	614 203 3425	SLIDE ASSY, TRAY
	614 203 3692	SLIDE (73-1)
	614 203 4026	LEVER, DISC (73-2)
	614 203 4033	LEVER, DISC (73-3)
	614 203 3579	RUBBER CUSHION, DISC (73-4)
	614 203 3586	RUBBER CUSHION, DISC (73-5)
	614 151 7032	SPRING COIL, CD LEVER, LIFT UP (73-6)
	614 151 7049	SPRING COIL, CD LEVER, LIFT UP (73-7)
	412 003 1708	SPECIAL SCREW, LEVER LOCK (73-8)
74	614 134 8858	GEAR, TRAY
75	614 134 8865	GEAR, TRAY
76	412 027 1906	SPECIAL WASHER, TRAY GEAR
77	614 199 0521	CUSHION, CD MECHANISM MTG.
78	614 204 9266	CUSHION, CD MECHANISM MTG.
	614 205 1566	CUSHION, 8X8X3MM, RUBBER, POWER TRANSFORMER
	614 125 6443	CUSHION, 15X25X3MM, LEAD MTG.
	614 125 0236	CUSHION, 5X15MM, CHASSIS MTG.
	614 125 0861	CUSHION, 10X10MM, CHASSIS MTG.
	614 126 5889	CUSHION, CD P.C.BOARD MTG.
	614 210 2299	CUSHION, 1.5X40X28.5MM, VOLUME P.C.BOARD
	614 125 1783	CUSHION, 4X10MM

FIXING PARTS

Ref. No.	Part No.	Description
Y01	411 026 6004	SCR S-TPG PAN 3X45MM, CABINET BACK
Y02	411 022 2505	SCR S-TPG FLT 2.6X8MM, CD OUT/SURROUND SOCKET
Y03	411 020 8905	SCR S-TPG BRZ + FLG 3X10MM, POWER TRANSFORMER
Y04	411 021 3503	SCR S-TPG BIN 3X10MM, AC POWER SOCKET
Y05	411 021 3503	SCR S-TPG BIN 3X10MM, ROD ANTENNA
Y06	412 003 1708	SPECIAL SCREW, SOCKET P.C.BOARD
Y07	411 020 8905	SCR S-TPG BRZ + FLG 3X10MM, BATTERY TERMINAL P.C.BOARD
Y08	411 020 8905	SCR S-TPG BRZ + FLG 3X10MM, EBSS SPEAKER
Y09	411 021 4005	SCR S-TPG BIN 3X12MM, BRSS DUCT
Y10	411 021 3107	SCR S-TPG BIN 2.6X8MM, TAPE "A" DIRECTION LED P.C.BOARD
Y11	411 020 8905	SCR S-TPG BRZ + FLG 3X10MM, SPEAKER
Y12	411 021 4005	SCR S-TPG BIN 3X12MM, CASSETTE TOP BRACKET
Y13	411 021 4005	SCR S-TPG BIN 3X12MM, LCD P.C.BOARD
Y14	411 021 4104	SCR S-TPG BIN 3X12MM, CASSETTE BOTTOM
Y15	411 026 6004	SCR S-TPG PAN 3X45MM, CHASSIS/CABINET
Y16	411 098 4403	SCR S-TPG BIN 3X25MM, CHASSIS/CABINET
Y17	411 020 8905	SCR S-TPG BRZ + FLG 3X10MM, DECK PANEL
Y18	411 022 7500	SCR S-TPG PAN 2X4MM, LUG MTG., TAPE MECHANISM
Y19	412 003 1708	SPECIAL SCREW, SHAFT, BATTERY
Y31	411 021 3503	SCR S-TPG BIN 3X10MM, TAPE MECHANISM
Y32	411 021 3503	SCR S-TPG BIN 3X10MM, TUNER P.C.BOARD
Y33	411 021 3503	SCR S-TPG BIN 3X10MM, AMP. P.C.BOARD
Y34	411 021 3503	SCR S-TPG BIN 3X10MM, BRACKET RESISTOR
Y35	411 016 1606	RING E 3MM, TUNING SHAFT
Y36	411 025 1901	SCR S-TPG PAN 2X3MM, TAPE MECHANISM SPRING PLATE
Y37	412 003 1708	SPECIAL SCREW, RECORD/ PLAY LEVER
Y40	411 021 4005	SCR S-TPG BIN 3X12MM, COVER
Y41	411 021 3503	SCR S-TPG BIN 3X10MM, CD TRAY
Y42	412 003 1708	SPECIAL SCREW, CD MECHANISM/ BOTTOM LID
Y45	411 021 6405	SCR S-TPG BIN 3X8MM, FINE TUNING P.C.BOARD
Y46	411 048 4606	SCR PAN + FLG 2X4MM, FINE TUNING P.C.BOARD

ELECTRICAL PARTS

Ref. No.	Part No.	Description
91	614 205 2334	SPEAKER, STEREO, LEFT/RIGHT
92	614 199 1887	SPEAKER, EBSS, WOOFER
93	⚠ 423 006 9301	FUSE 125V 4A
94	614 023 6446	ROD ANTENNA
or	614 023 6507	ROD ANTENNA
or	614 023 6521	ROD ANTENNA
95	419 000 5401	PIEZO BUZZER 7SB-20-7, TWEETER SPEAKER
95	419 000 7900	PIEZO BUZZER BCE20BN14A, TWEETER SPEAKER
	614 019 7648	SOCKET, ROD ANTENNA
CN12	614 199 2044	SOCKET, 4P, RECORD/PLAY HEAD
or	614 208 7060	SOCKET, 4P, RECORD/PLAY HEAD
CN13	614 199 2051	SOCKET, 2P, ERASE HEAD
or	614 208 7077	SOCKET, 2P, ERASE HEAD
CN15	614 199 2037	SOCKET, 3P, PLAY HEAD
or	614 208 7053	SOCKET, 3P, PLAY HEAD
CN16	614 199 2020	SOCKET, 12P, MECHANISM
or	614 208 7046	SOCKET, 12P, MECHANISM
CN22	614 199 2006	SOCKET, 3P, SPEAKER STEREO
or	614 208 7022	SOCKET, 3P, SPEAKER STEREO
CN28	614 199 2013	SOCKET, 2P, SPEAKER WOOFER
or	614 208 7039	SOCKET, 2P, SPEAKER WOOFER
CN35	614 211 0355	CORD, 20P
CN36	614 211 0331	LEAD CORD, 20P

TUNER P.C.BOARD ASSY

Ref. No.	Part No.	Description
101	614 208 6919	P.C BOARD ASSY, TUNER
VC/VCT	614 007 8480	TUNING CAPACITOR
CT1	614 007 6356	TRIMMER, 11PF
CT2	614 007 6356	TRIMMER, 11PF
T201	614 030 4077	I.F.T, FM
or	614 030 4084	I.F.T, FM
T202	614 030 4220	I.F.T, FM
or	614 030 4237	I.F.T, FM
T203	614 030 4039	I.F.T, AM
or	614 030 4046	I.F.T, AM
L101	614 034 6756	V.H.F COIL, FM
L102	614 034 7104	V.H.F COIL, FM
L103	614 028 4010	FILTER, SW2
L104	614 032 2682	ANTENNA COIL, SW2
L105	614 205 1917	ANTENNA COIL ASSY, SW1/MW
L106	614 033 9772	O.S.C COIL, SW2
or	614 033 9789	O.S.C COIL, SW2
L107	614 034 1805	O.S.C COIL, SW1
or	614 034 1812	O.S.C COIL, SW1
L108	614 034 1454	O.S.C COIL, MW
or	614 034 1461	O.S.C COIL, MW
CF201	614 030 5630	IF FILTER, RED, FM
or	614 030 5647	IF FILTER, BLUE, FM
or	614 030 5654	IF FILTER, ORANGE, FM
or	614 030 5661	IF FILTER, BLACK, FM
or	614 030 5678	IF FILTER, WHITE, FM
CF203	614 030 7580	I.F FILTER, AM
BPF	614 028 9336	FILTER, FM
S1	614 024 2584	SWITCH, BAND
S2	614 024 2591	SWITCH, FM MODE
SVR201	614 003 3250	SEMI-FIXED RESISTOR
CN10	614 035 5949	SOCKET, 3P, FINE TUNING
CN11	614 035 5956	SOCKET, 4P, AMP.
CN41	614 017 2546	PLUG, 3P, CD P.C.BOARD
TP	614 017 6964	TERMINAL BOARD
or	614 123 1808	TERMINAL
IC101	409 016 0200	IC LA1186N-AUDIO
IC201	409 163 3802	IC LA1805-SS
Q101	405 018 7902	TR 2SC380TM-O
or	405 018 7902	TR 2SC380TM-O
Q102	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
D101	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D102	407 000 2605	VARACTOR DI SD115
C122	403 081 7706	POLYPRO 340P J 100V
or	403 088 1806	STYRENE 340P J 50V
C214	403 080 8902	POLYPRO 1500P J 100V
or	403 087 5300	STYRENE 1500P J 50V

AMP. P.C.BOARD ASSY

Ref. No.	Part No.	Description
102	614 210 0905	P.C BOARD ASSY, AMP.
	614 199 1986	SOCKET, PHONES
	614 199 2709	HEAT SINK (REF.NO.66)
or	614 208 2591	HEAT SINK (REF.NO.66)
	411 021 4005	SCR S-TPG BIN 3X12MM (REF.NO.Y38)
	411 023 9800	SCR S-TPG PAN 3X8MM (REF.NO.Y39)
L901	614 034 1751	O.S.C COIL
L902	614 028 6793	FILTER
L903	614 028 6793	FILTER
S901	614 199 1924	SWITCH, FUNCTION
S902	614 199 1917	SWITCH, POWER
S903	614 199 1931	SWITCH, RECORD/PLAY
S904	614 199 1948	SWITCH, SURROUND
SVR901	614 003 3090	SEMI-FIXED RESISTOR
CN11	614 035 4942	SOCKET, 5P
CN12	614 017 2263	PLUG, 4P
CN13	614 017 2249	PLUG, 2P
CN14	614 020 1215	SOCKET, 2P (DIPMATE)
CN15	614 017 2102	PLUG, 3P
CN16	614 017 2195	PLUG, 12P
CN17	614 035 4928	SOCKET, 3P
CN18	614 035 4959	SOCKET, 6P
CN19	614 035 5017	SOCKET, 12P
CN20	614 198 3004	SOCKET, 10P
CN21	614 020 1253	SOCKET, 6P (DIPMATE)
or	614 199 1993	SOCKET, 6P (WITH LEAD)
or	614 208 7015	SOCKET, 6P (WITH LEAD)
CN22	614 017 2256	PLUG, 3P
CN23	614 020 6548	SOCKET, 2P
CN24	614 035 4942	SOCKET, 5P
CN26	614 035 4935	SOCKET, 4P
CN29	614 035 5017	SOCKET, 12P
IC601	409 020 2900	IC LB1433N
IC901	409 002 4700	IC BA3416BL
IC902	409 115 6806	IC BA3312N
IC903	409 178 8106	IC LA4630N
Q601	405 009 5306	TR 2SB927-T
Q602	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q603	405 004 4502	TR 2SA608-F-NP
Q701	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q702	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q703	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q704	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q801	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q802	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q803	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q804	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q901	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q902	⚠ 405 023 2602	TR 2SD325-F
Q903	405 019 4108	TR 2SC536-G-AUD-NP
Q904	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q905	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q906	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q907	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q913	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q914	⚠ 405 024 4308	TR 2SD612-F
Q915	405 004 4502	TR 2SA608-F-NP
Q916	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q917	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q924	405 011 8609	TR 2SC1740S-S
or	405 019 2609	TR 2SC536-F-AUD-SPA
or	405 019 3705	TR 2SC536-G-AUD-SPA
D901	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D904	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D905	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D906	407 053 2607	ZENER DIODE MTZ10B
D907	407 053 3802	ZENER DIODE MTZ15C
D912	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D913	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D917	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D923	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D929	407 066 5800	DIODE SB007-03SPA
D932	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D933	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D934	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D935	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
C719	403 063 7601	POLYESTER 0.082U K 50V
or	403 063 8400	POLYESTER 0.082U M 50V
C819	403 063 7601	POLYESTER 0.082U K 50V
or	403 063 8400	POLYESTER 0.082U M 50V
C927	403 058 2406	POLYESTER 0.015U J 50V
C947	403 060 8908	POLYESTER 0.033U M 50V
C948	403 060 8908	POLYESTER 0.033U M 50V
C966	403 057 3800	POLYESTER 0.1U M 50V
C969	403 085 4008	NP-ELECT 10U M 16V
R826	402 032 9707	FUSIBLE RES 2.2 J- 1/4W
R917	402 041 1907	FUSIBLE RES 1 J- 1/4W
R934	402 032 9707	FUSIBLE RES 2.2 J- 1/4W
R935	402 032 9707	FUSIBLE RES 2.2 J- 1/4W
R964	402 041 1907	FUSIBLE RES 1 J- 1/4W

VOLUME P.C.BOARD ASSY

Ref. No.	Part No.	Description
103	614 208 7473	P.C BOARD ASSY, VOLUME
S905	614 199 1955	SWITCH, BRSS
S912	614 018 9056	SWITCH, VOLUME, UP
S913	614 018 9056	SWITCH, VOLUME, DOWN
VR702	614 205 8206	VARIABLE RESISTOR, TREBLE (VR702,802)
VR703	614 205 8206	VARIABLE RESISTOR, BASS (VR703,803)

SOCKET P.C.BOARD ASSY

Ref. No.	Part No.	Description
104	614 212 4123	P.C BOARD ASSY, SOCKET
	614 035 2719	SOCKET, CD OUT
	614 035 7769	SOCKET, SURROUND SPEAKER
	614 020 2649	SOCKET, MIC
S910	614 019 1806	SOCKET, BEAT CANCEL
or	614 019 2278	SOCKET, BEAT CANCEL
CN14	614 020 1215	SOCKET, 2P (PIPMATE)
CN23	614 020 6548	SOCKET, 2P
CN24	614 035 4942	SOCKET, 5P
CN26	614 035 4911	SOCKET, 2P
CN28	614 017 2249	PLUG, 2P

TAPE "A" DIRECTION LED P.C.BOARD ASSY

Ref. No.	Part No.	Description
105	614 208 7497	P.C BOARD ASSY, TAPE "A" DIRECTION LED
D908	407 037 4009	LED SLP-173B-01-B
or	407 037 4108	LED SLP-173B-01-C
D909	407 037 4009	LED SLP-173B-01-B
or	407 037 4108	LED SLP-173B-01-C

POWER SUPPLY P.C.BOARD ASSY

Ref. No.	Part No.	Description
106	614 210 0516	P.C BOARD ASSY, POWER SUPPLY
	⚠ 614 020 0881	SOCKET, AC INPUT
	614 019 8133	SOCKET, EXT. DC
	614 123 0023	BRACKET FUSE
	614 203 7362	HEAT SINK
	411 021 6405	SCR S-TPG BIN 3X8MM (REF.NO.Y20)
	614 017 6964	TERMINAL BOARD
T901	⚠ 614 205 7643	POWER TRANSFORMER
L904	614 197 4842	FILTER
S914	⚠ 614 018 6383	SWITCH, VOLTAGE SELECTOR
CN21	614 017 2133	PLUG, 6P
CN27	614 020 1239	SOCKET, 4P
Q918	405 007 8606	TR 2SB632-E
Q919	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q920	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q921	405 004 4502	TR 2SA608-F-NP
Q922	405 004 4502	TR 2SA608-F-NP
Q923	405 000 3103	TR DTC114ES
D918	⚠ 407 107 6001	DIODE RL203-BD80
D919	⚠ 407 107 6001	DIODE RL203-BD80
D920	⚠ 407 107 6001	DIODE RL203-BD80
D921	⚠ 407 107 6001	DIODE RL203-BD80
D922	407 053 3604	ZENER DIODE MTZ15A
D925	407 063 7807	ZENER DIODE MTZ13A
D926	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D927	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D930	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D931	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D932	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133

BATTERY TERMINAL, POWER P.C.BOARD ASSY

Ref. No.	Part No.	Description
107	614 208 7510	P.C BOARD ASSY, BATTERY TERMINAL, POWER
	614 199 4406	TERMINAL, POWER, BATTERY 15V

BATTERY TERMINAL, TIMER (+) P.C.B. ASSY

Ref. No.	Part No.	Description
108	614 208 7527	P.C BOARD ASSY, BATTERY TERMINAL, TIMER (+)
	614 199 0484	TERMINAL BATTERY, 4.5V (-)

BATTERY TERMINAL, TIMER (-) P.C.B. ASSY

Ref. No.	Part No.	Description
109	614 208 7534	P.C BOARD ASSY, BATTERY TERMINAL, TIMER (-)
	614 199 0484	TERMINAL BATTERY, 4.5V (-) (2 USED)

CD MAIN P.C.BOARD ASSY

Ref. No.	Part No.	Description
110	614 210 0455	P.C BOARD ASSY, CD MAIN
	614 017 2539	PLUG, 2P, TEST POINT
	614 017 2546	PLUG, 3P, TEST POINT
	614 017 2553	PLUG, 4P, TEST POINT
L301	614 199 1962	FILTER
or	614 194 3596	FILTER
L551	614 194 3619	O.S.C COIL
L681	614 028 4256	FILTER
X551	614 194 2919	CERAMIC RESONATOR
SVR301	614 003 3120	SEMI-FIXED RESISTOR, 100K OHM
or	614 003 4202	SEMI-FIXED RESISTOR, 100K OHM
SVR302	614 003 3120	SEMI-FIXED RESISTOR, 100K OHM
or	614 003 4202	SEMI-FIXED RESISTOR, 100K OHM
SVR303	614 003 3106	SEMI-FIXED RESISTOR, 30K OHM
SVR304	614 003 3106	SEMI-FIXED RESISTOR, 30K OHM
SVR306	614 003 3083	SEMI-FIXED RESISTOR, 10K OHM
CN18	614 201 7630	SOCKET, 6P
CN31	614 017 2577	PLUG, 6P, SENSOR
CN32	614 017 2133	PLUG, 6P, ACTUATOR
RA401	614 194 8379	RESISTOR
RA402	614 194 8362	RESISTOR
IC301	409 124 6507	IC LA9200NM
IC401	409 159 8705	IC LA6531
IC403	409 018 4909	IC LA6458S
IC551	409 120 4002	IC LC7860N
IC552	409 089 5201	IC LC3517AS-15
IC981	409 136 7509	IC LC7881-C
IC982	409 018 4909	IC LA6458S
Q351	405 004 4601	TR 2SA608-F-SPA
Q401	405 021 0204	TR 2SD1012-F-SPA
Q405	405 008 7103	TR 2SB808-G-SPA
Q510	405 000 4407	TR DTC124ES
Q511	405 000 1208	TR DTA124ES
Q512	405 000 4407	TR DTC124ES
Q550	405 000 4407	TR DTC124ES
Q551	405 019 3705	TR 2SC536-G-AUD-SPA
Q655	405 020 7402	TR 2SC945A-P
or	405 018 0200	TR 2SC3331-U
Q656	405 020 7402	TR 2SC945A-P
or	405 018 0200	TR 2SC3331-U
Q781	405 018 0200	TR 2SC3331-U
or	405 020 7204	TR 2SC945A-K
Q782	405 000 3400	TR DTC114TS
Q783	405 021 0204	TR 2SD1012-F-SPA
Q881	405 018 0200	TR 2SC3331-U
or	405 020 7204	TR 2SC945A-K
Q882	405 000 3400	TR DTC114TS
Q883	405 021 0204	TR 2SD1012-F-SPA
D301	408 000 0103	VA SVC211SP-B2-AUD
D302	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D321	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D401	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D551	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D552	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D553	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D565	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D566	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D682	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
C312	403 080 5000	POLYPRO 1000P J 100V
C321	403 067 6204	MT-COMPO 0.15U J 50V
C406	403 067 5603	MT-COMPO 0.1U J 50V
Q581	405 000 4407	TR DTC124ES
Q681	405 007 6701	TR 2SB598-F-NP
Q682	405 000 3103	TR DTC114ES
Q683	405 000 3103	TR DTC114ES
Q684	405 021 0204	TR 2SD1012-F-SPA
D402	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D403	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D404	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D405	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D407	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D408	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D409	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D501	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D502	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D503	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D504	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D505	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D525	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D526	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D580	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D681	407 066 5800	DIODE SB007-03SPA

CD SUB P.C.BOARD ASSY

Ref. No.	Part No.	Description
111	614 210 0479	P.C BOARD ASSY, CD SUB
	614 121 5891	HEAT SINK, IC681 MTG.
	614 207 8969	SHIELD, IC580 SHIELD, PCB PATARN SIDE MTG.
	614 004 7189	RESISTOR, 4.7K OHM
	411 021 6405	SCR S-TPG BIN 3X8MM, IC681 MTG.
	614 130 0238	LUG, LEAD MTG.
	614 116 5271	SHIELD PLATE, IC580 SHIELD, PLATE COVER
	614 116 9392	SHIELD PLATE, IC580 SHIELD, PCB PARTS SIDE MTG.
	614 205 2914	IC PROTECTOR ICP-N25, IC404 MTG.
CT502	614 007 6332	TRIMMER
L401	614 027 7074	CHOKE
L402	614 027 6923	CHOKE
L501	614 028 6748	FILTER
L580	614 028 4133	FILTER
L581	614 028 4133	FILTER
X501	614 194 2902	CERAMIC RESONATOR
X502	614 008 1046	CRYSTAL
X580	614 200 0311	CERAMIC RESONATOR
or	614 207 7696	RESONATOR
SVR501	614 003 3168	SEMI-FIXED RESISTOR
CN19	614 201 7685	SOCKET, 11P
CN33	614 017 2553	PLUG, 4P
CN34	614 017 2157	PLUG, 8P
CN35	614 203 2343	SOCKET, 20P, FFC
CN36	614 203 2343	SOCKET, 20P, FFC
CN41	614 212 3096	SOCKET, 3P, TUNER P.C.BOARD
IC402	409 159 8705	IC LA6531
IC501	410 049 9900	IC CXP5078H-003Q
IC580	410 050 0002	IC TMP42C40P-1327
IC681	409 145 2809	IC NJM7805FA
Q402	405 000 3400	TR DTC114TS
Q403	405 000 3400	TR DTC114TS
Q404	405 000 3400	TR DTC114TS
Q471	405 019 3705	TR 2SC536-G-AUD-SPA
Q472	405 019 3705	TR 2SC536-G-AUD-SPA
Q501	405 085 9007	TR 2SJ105-Y
or	405 085 9106	TR 2SJ105-GR
Q502	405 004 4601	TR 2SA608-F-SPA
Q503	405 000 4407	TR DTC124ES
Q580	405 000 4407	TR DTC124ES

TIMER/CD LCD P.C.BOARD ASSY

Ref. No.	Part No.	Description
112	614 210 0509	P.C BOARD ASSY, TIMER/CD LCD
	614 205 7896	LCD, TIMER/CD LCD
S520	614 018 9056	SWITCH, SET
or	614 019 1592	SWITCH, SET
S521	614 018 9056	SWITCH, HOUR
or	614 019 1592	SWITCH, HOUR
S522	614 018 9056	SWITCH, MINUTE
or	614 019 1592	SWITCH, MINUTE
S523	614 018 9056	SWITCH, TIMER
or	614 019 1592	SWITCH, TIMER
S524	614 018 9056	SWITCH, MEMO C.
or	614 019 1592	SWITCH, MEMO C.
S525	614 018 9056	SWITCH, PLAY/PAUSE
or	614 019 1592	SWITCH, PLAY/PAUSE
S526	614 018 9056	SWITCH, OPEN/CLOSE
or	614 019 1592	SWITCH, OPEN/CLOSE
S527	614 018 9056	SWITCH, TAPE EDIT
or	614 019 1592	SWITCH, TAPE EDIT
S528	614 018 9056	SWITCH, REPEAT
or	614 019 1592	SWITCH, REPEAT
S529	614 018 9056	SWITCH, FF (FWD)
or	614 019 1592	SWITCH, FF (FWD)
S530	614 018 9056	SWITCH, FF (BACK)
or	614 019 1592	SWITCH, FF (BACK)
S531	614 018 9056	SWITCH, STOP/CLEAR
or	614 019 1592	SWITCH, STOP/CLEAR
S532	614 018 9056	SWITCH, PROGRAM
or	614 019 1592	SWITCH, PROGRAM
S651	614 024 2829	SPECIAL SWITCH
or	614 208 1198	OPTO CONNECTOR
CN35	614 203 2343	SOCKET, 20P
CN36	614 203 2343	SOCKET, 20P

PARTS LIST

Ref. No.	Part No.	Description
D605	407 027 7003	LED SLP-153B-B
or	407 108 1906	LED SLP-153B-C
D606	407 027 7003	LED SLP-153B-B
or	407 108 1906	LED SLP-153B-C
D607	407 027 7003	LED SLP-153B-B
or	407 108 1906	LED SLP-153B-C
D608	407 027 7003	LED SLP-153B-B
or	407 108 1906	LED SLP-153B-C
D924	407 027 7003	LED SLP-153B-B
or	407 108 1906	LED SLP-153B-C

ELECTRICAL VOLUME P.C.BOARD ASSY

Ref. No.	Part No.	Description
113	614 208 7541	P.C BOARD ASSY, ELECTRICAL VOLUME
CN29	614 035 5017	SOCKET, 12P
IC904	409 053 0409	IC TC9153AP
IC905	409 018 4503	IC LA6458DS
Q705	405 010 9607	TR 2SC1571-F-NP
or	405 010 9706	TR 2SC1571-G-NP
Q805	405 010 9607	TR 2SC1571-F-NP
or	405 010 9706	TR 2SC1571-G-NP
Q925	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q926	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
D940	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D941	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D942	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
C970	403 106 1207	NP-ELECT 4.7U M 10V

FINE TUNING P.C.BOARD ASSY

Ref. No.	Part No.	Description
114	614 208 6933	P.C BOARD ASSY, FINE TUNING
VR101	614 003 7388	VARIABLE RESISTOR, FINE TUNING
CN10	614 035 4928	SOCKET, 3P, TUNER

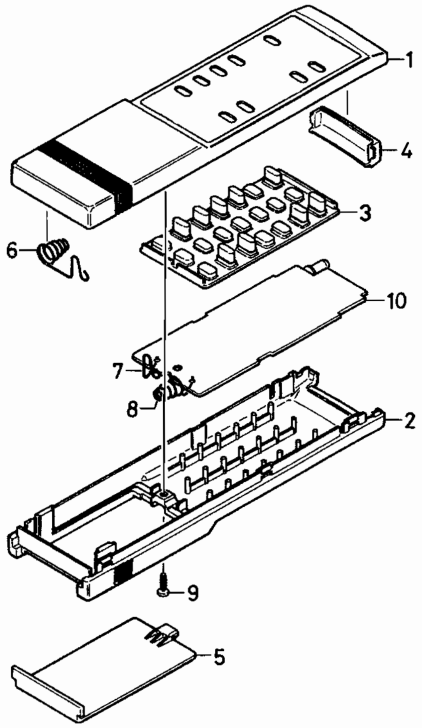
REMOTE CONTROL

PACKING & ACCESSORIES

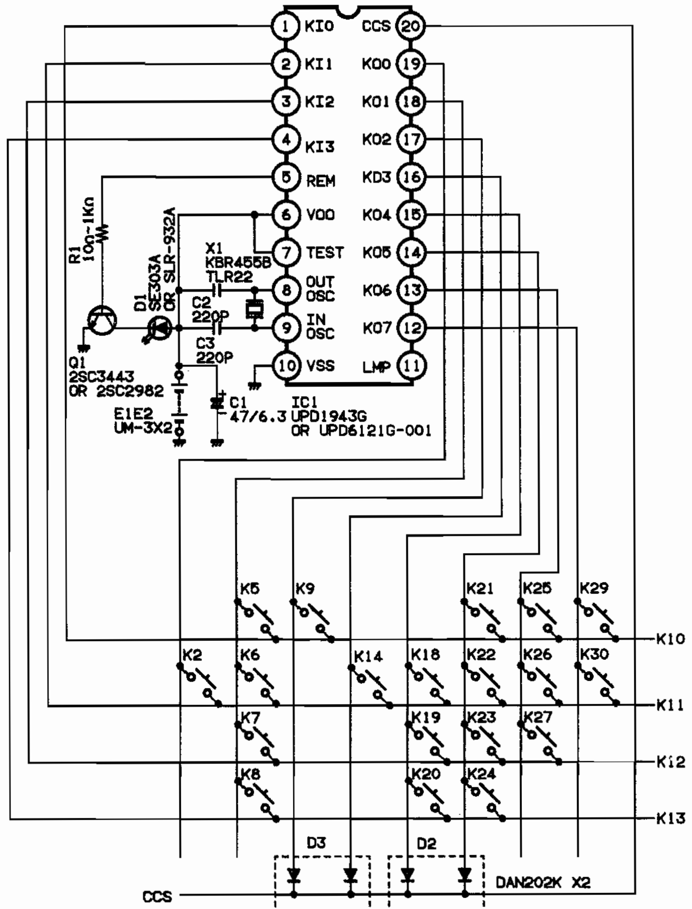
Ref. No.	Part No.	Description
	614 209 4372	REMOCON ASSY (RB-CD660)
	614 207 4756	POLY COVER, 70X210MM, REMOCON

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 209 5201	TOP LID ASSY
2	614 203 2602	BOTTOM LID
3	614 209 5225	PUSH BUTTON, RUBBER SWITCH
4	614 203 2626	SIGN WINDOW, IR FILTER
5	614 203 2619	BATTERY LID
6	614 203 2664	TERMINAL BATTERY (+,-)
7	614 203 2671	SPRING COIL, TERMINAL BATTERY (+)
8	614 203 2688	SPRING COIL, TERMINAL BATTERY (-)
9	411 100 0102	SCR S-TPG BIN 2X6MM

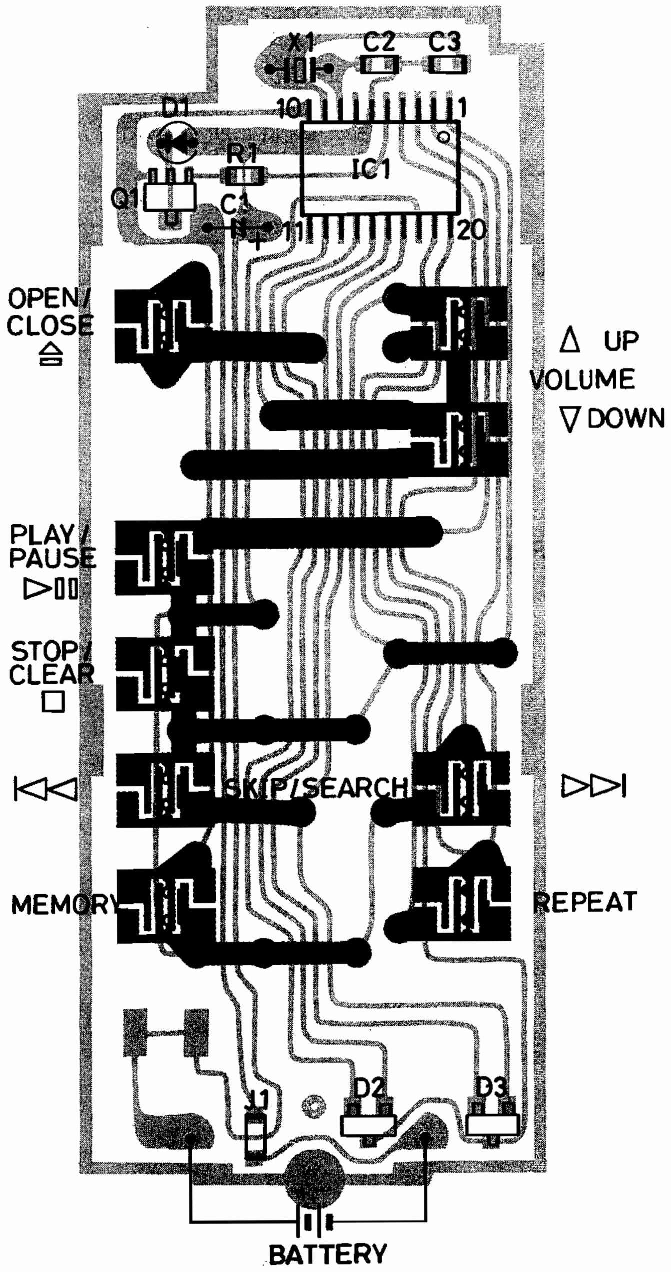

1
4
3
6
10
7
8
2
9
5

REMOTE CONTROL


1 KIO
2 KI1
3 KI2
4 KI3
5 REM
6 VOO
7 TEST
8 OUT OSC
9 IN OSC
10 VSS
20 CCS
19 KOO
18 KO1
17 KO2
16 KD3
15 KO4
14 KO5
13 KO6
12 KO7
11 LMP
R1 10Ω-1KΩ
D1 SE303A OR SLR-932A
X1 KBR455B TLR22
C2 220P
C3 220P
Q1 2SC3443 OR 2SC2982
E1E2 UM-3X2
C1 47/6.3
IC1 UPD1943G OR UPD6121G-001
K5
K9
K21
K25
K29
K2
K6
K14
K18
K22
K26
K30
K7
K19
K23
K27
K8
K20
K24
K10
K11
K12
K13
D3
D2
CCS
DAN202K X2

KEY NAME

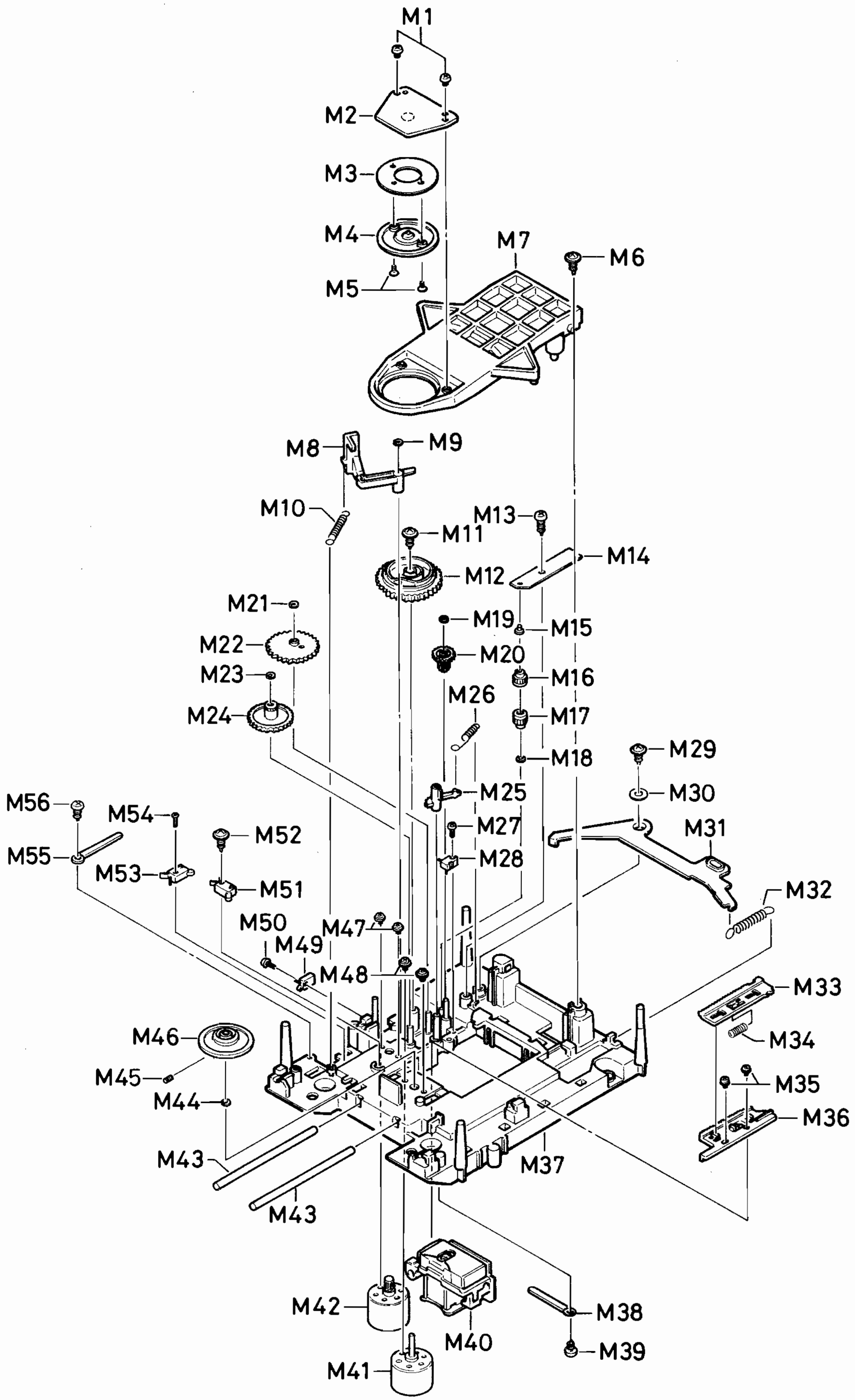
KEY NO.	FUNCTION NAME
K2	REPEAT
K5	STOP/CLEAR
K6	MEMORY
K7	PLAY/PAUSE
K8	FWD
K9	REW
K14	OPEN/CLOSE
K18	KEY1
K19	KEY2
K20	KEY3
K21	KEY4
K22	KEY5
K23	KEY6
K24	KEY7
K25	KEY8
K26	KEY9
K27	KEY0
K29	VOLUME UP
K30	VOLUME DOWN


X1
C2
C3
D1
1
11
R1
IC1
Q1
C1
11
20
OPEN/CLOSE
Δ UP
VOLUME
∇ DOWN
PLAY/PAUSE
STOP/CLEAR
SKIP/SEARCH
MEMORY
REPEAT
J1
D2
D3
BATTERY

REMOCON P.C.BOARD ASSY

Ref. No.	Part No.	Description
10	614 209 5232	P.C BOARD ASSY, REMOCON
X1	614 199 8435	CERAMIC RESONATOR
or	614 199 8442	CERAMIC RESONATOR
J1	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
IC1	410 026 9008	IC UPD6121G-001
Q1	406 006 7508	TR 2SC2982B
or	406 006 7607	TR 2SC2982C
or	406 006 7300	TR 2SC3443BF
or	406 006 7409	TR 2SC3443BG
D1	408 004 0604	LED SE303A
or	408 004 0703	LED SLR-932A
or	408 008 7906	LED SE303B
or	408 008 8002	LED SE303C
or	408 008 8101	LED SE303YD NEC
D2	408 008 8200	DIODE DAN202K
D3	408 008 8200	DIODE DAN202K
R1	401 037 5202	MT-GLAZE 100 JA 1/10W

EXPLODED VIEW (CD MECHANISM)

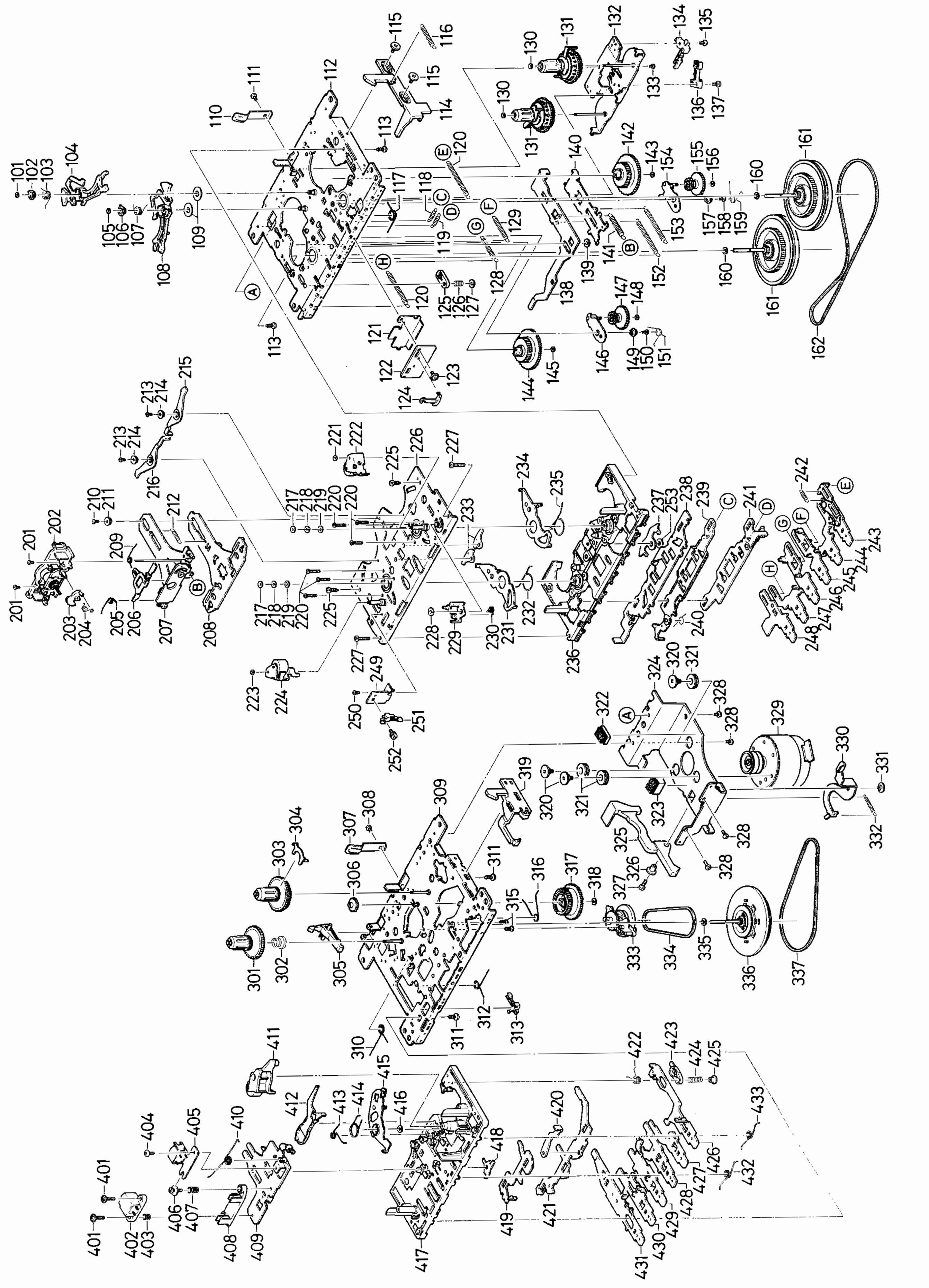


PARTS LIST

CD MECHANISM (PM—DAD650/SP)

Ref. No.	Part No.	Description
M1	411 021 2704	SCR S-TPG BIN 2.6X6MM, BRACKET MTG.
M2	614 205 1481	BRACKET ASSY, CHUCK PULLEY PRESS
M3	614 204 9280	PULLEY, CHUCK PULLEY FLYWHEEL
M4	614 205 7421	PULLEY, CHUCKING
M5	411 033 2907	SCR FLT 2X4MM, CHUCK PULLE FLYWHEEL MTG.
M6	411 020 8905	SCR S-TPG BRZ+FLG 3X10MM
M7	614 205 1283	LEVER, CHUCKING
M8	614 140 1331	LEVER, 8CM DISC DIRECTION
M9	412 013 0609	SPECIAL WASHER, 1.6X3.2X0.25MM, GEAR MTG.
M10	614 151 7025	SPRING COIL, DIRECTION LEVER
M11	411 021 5705	SCR S-TPG BIN 3X6MM
M12	614 199 1627	GEAR, CAM GEAR
M13	411 021 3503	SCR S-TPG BIN 3X10MM
M14	614 195 7814	SPRING PLATE
M15	614 197 7539	SPACER
M16	614 197 7645	GEAR, LOADING
M17	614 134 8834	GEAR, LOADING
M18	412 012 7005	SPECIAL WASHER, 2.1X4X0.25MM
M19	412 013 0609	SPECIAL WASHER, 1.6X3.2X0.25MM
M20	614 134 8827	GEAR, LOADING
M21	412 013 0609	SPECIAL WASHER, 1.6X3.2X0.25MM
M22	614 134 8872	GEAR, PICK-UP SLED
M23	412 013 0609	SPECIAL WASHER, 1.6X3.2X0.25MM
M24	614 134 8889	GEAR
M25	614 140 1317	LEVER, TRIGGER GEAR
M26	614 151 7056	SPRING COIL, TRIGGER GEAR
M27	411 022 8408	SCR S-TPG PAN 2X8MM, CHUCKING SWITCH MTG.
M28	614 024 1600	SWITCH, CHUCKING
M29	411 021 3503	SCR S-TPG BIN 3X10MM
M30	411 092 2900	WASHER Z 3X10X1MM
M31	614 140 1324	LEVER, CHUCKING CAM
M32	614 151 7063	SPRING COIL, CHUCKING CAM LEVER
M33	614 134 8919	GEAR, RICK UP SLED RACK GEAR
M34	614 151 7223	SPRING COIL, PICK UP SLED RACK GEAR
M35	411 044 7502	SCR PAN+SW 2X5MM, RACK GEAR
M36	614 134 8902	GEAR, PICK UP SLED RACK GEAR
M37	614 199 1443	CHASSIS ASSY, CD MECHANISM
M38	614 129 9136	LUG, LEAD MTG.
M39	411 021 6405	SCR S-TPG BIN 3X8MM, LEAD MTG.
M40	614 204 5541	PICK UP
M41	614 045 2105	COMMUTATE MOTOR, SPINDLE
M42	614 195 8101	COMMUTATE MOTOR ASSY, SLED MOTOR
M43	614 145 9622	SHAFT, PICK UP RAIL
M44	412 032 0208	SPECIAL WASHER, SPINDLE MOTOR SHAFT
M45	411 063 1109	SCR SET HEX-SCT 2X6MM, TURN TABLE MTG.
M46	614 073 6939	TURN TABLE
M47	411 044 7205	SCR PAN+SW 2X4MM, SLED MOTOR MTG.
M48	411 044 7205	SCR PAN+SW 2X4MM, SPINDLE MOTOR
M49	614 018 9223	SWITCH, OPEN
M50	411 104 4205	SCR TPG PAN PCS 1.7X8MM, SWITCH MTG.
M51	614 018 9223	SWITCH, LIMIT
M52	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM, LIMIT SWITCH MTG.
M53	614 018 9223	SWITCH, 8CM DICK DIRECTION
M54	411 104 4205	SCR TPG PAN PCS 1.7X8MM, SWITCH MTG.
M55	614 129 9136	LUG, LEAD MTG.
M56	411 021 5705	SCR S-TPG BIN 3X6MM, LEAD MTG.
	614 198 7866	SOCKET, 4P, MOTOR LEAD, CN33
	614 198 7873	SOCKET, 8P SWITCH LEAD, CN34
	HZGSIGRG332++	SI-GREASE, G332, CHUCK PULLEY
	HZGMCGR6020++	MC-GREASE, MOLYKOTE X5-6020
	HZGFLGR474B++	F-GREASE, FLOIL G-474B, GEAR SHAFT
	HZCTBND2001++	THREE-BOND, TB2001, TURN TABLE (TB2105 MIXED IN A 1 : 1 RATIO)
	HZCTBND2105++	THREE-BOND, TB2105, TURN TABLE (TB2001 MIXED IN A 1 : 1 RATIO)

EXPLODED VIEW (TAPE MECHANISM)



PARTS LIST

TAPE MECHANISM (TM—WCD650TN/SP)

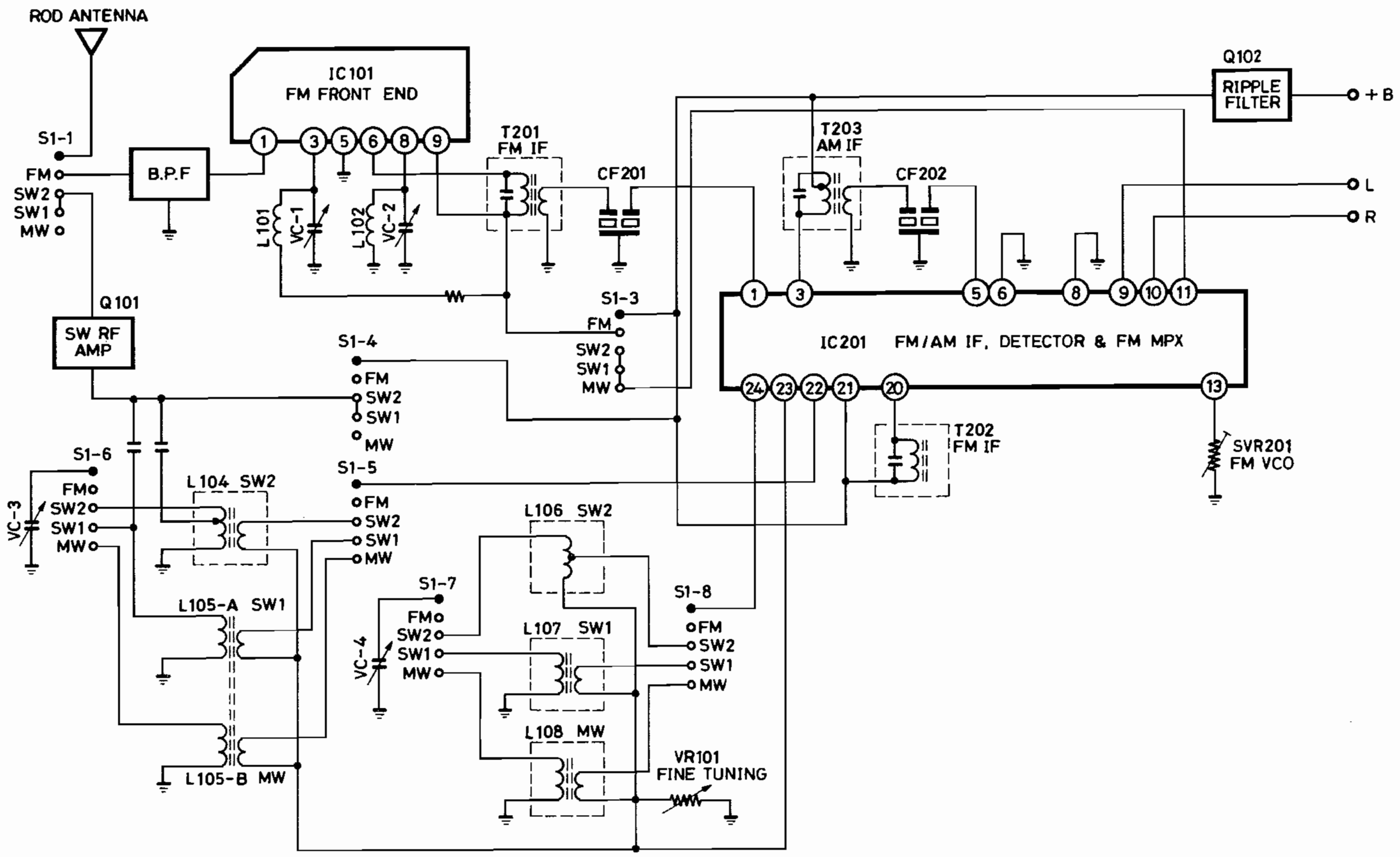
Ref. No.	Part No.	Description
101	412 013 4904	SPECIAL WASHER, 1.2X3X0.25MM
102	614 196 2825	STOPPER, SPRING
103	614 196 1958	SPRING WIRE, AUTO LEVER (F)
104	614 196 1514	LEVER, AUTO LEVER (F)
105	412 013 4904	SPECIAL WASHER, 1.2X3X0.25MM
106	614 196 2825	STOPPER, SP STOPPER
107	614 196 1941	SPRING WIRE, AUTO LEVER (R)
108	614 196 1521	LEVER, AUTO LEVER (R)
109	412 027 3405	SPECIAL WASHER, 3.1X8.5X0.13MM
110	614 196 1897	SPRING PLATE, CASSETTE
111	412 027 2606	SPECIAL SCREW, C TITE, 2X3MM
112	614 204 6395	CHASSIS ASSY
113	412 003 8707	SPECIAL SCREW, 2X6MM
114	614 196 1415	SLIDE, EJECT SLIDE LEVER
115	412 005 8101	SPECIAL SCREW, PK COLLAR "A"
116	614 196 1798	SPRING COIL, EJECT SLIDE LEVER
117	614 204 4216	SPRING COIL, STOP BUTTON
118	614 196 1804	SPRING COIL, LOCK ACTUATOR
119	614 196 1835	SPRING COIL, SWITCH ACTUATOR
120	614 196 1859	SPRING COIL, PROGRAM BUTTON LEVER
121	614 196 2764	SHIELD PLATE, HEAD SHIELD
122	614 196 2436	P.C BOARD, HEAD WIRE TERMINAL
123	412 027 2101	SPECIAL SCREW, TWO LOCK SCREW, 2X4MM
124	614 129 5763	FIXER, WIRE CLAMPER
125	614 196 1422	LEVER, PAUSE
126	614 196 1736	SPRING COIL, PAUSE LEVER
127	412 013 7608	SPECIAL WASHER, 2.1X5X0.5MM
128	614 196 1842	SPRING COIL, REW BUTTON LEVER
129	614 196 1842	SPRING COIL, F.FWD BUTTON LEVER
130	412 027 3504	SPECIAL WASHER, 1.2X3.7X0.4MM
131	614 210 5245	REEL ASSY
132	614 196 5345	BRACKET REEL SHAFT ASSY, REEL PLATE ASSY
133	412 027 3009	SPECIAL WASHER, CAMERA S TITE 1.7X3MM
134	614 204 4124	SWITCH, TAPE "A" POWER
135	412 004 0908	SPECIAL SCREW, C TITE 2X5MM
136	614 196 9756	SWITCH, PLAY
137	412 004 0908	SPECIAL SCREW
138	614 196 1262	SLIDE, RELEASE PLATE
139	412 031 9608	SPECIAL WASHER, 2MM
140	614 196 1392	SLIDE, F.FWD SWITCH PLATE
141	614 196 1767	SPRING COIL, RC
142	614 204 6005	GEAR, T CAM GEAR (F)
143	412 013 4904	SPECIAL WASHER, 1.2X3X0.25MM
144	614 204 6012	GEAR, T CAM GEAR (R)
145	412 013 4904	SPECIAL WASHER, 1.2X3X0.25MM
146	614 196 4317	LEVER ASSY, F.FWD GEAR ARM ASSY (R)
147	614 196 1248	GEAR, F.FWD GEAR
148	412 013 4904	SPECIAL WASHER, 1.2X3X0.25MM
149	614 196 1156	BOSS, F.FWD GEAR ARM COLLAR
150	412 029 8408	SPECIAL SCREW, CAMERA S 1.7X4MM
151	614 196 1996	SPRING WIRE, F.FWD GEAR ARM SP (R)
152	614 196 1828	SPRING COIL, BUTTON LEVER
153	614 196 1880	SPRING COIL, F.FWD SWITCH PLATE
154	614 196 4300	LEVER ASSY, F.FWD GEAR ARM ASSY (F)
155	614 196 1248	GEAR, F.FWD GEAR
156	412 013 4904	SPECIAL WASHER, 1.2X3X0.25MM
157	614 196 1156	BOSS, F.FWD GEAR ARM COLLAR
158	412 029 8408	SPECIAL SCREW, CAMERA 1.7X4MM
159	614 196 1996	SPRING WIRE, F.FWD GEAR ARM SP (F)
160	412 027 3207	SPECIAL WASHER, 2.1X3X0.3MM
161	614 196 4201	FLYWHEEL ASSY
162	614 196 2924	SQUARE BELT, MEIN BELT
201	412 029 8408	SPECIAL SCREW, CAMERA 1.7X4MM
202	614 204 6869	BRACKET HEAD ASSY, ROTARY HEAD ASSY, PLAY
203	614 196 1170	GEAR, HEAD TURN OVER
204	614 196 2009	SPRING WIRE, HEAD TURN OVER
205	614 196 1910	SPRING WIRE, PINCH ROLLER SPRING (R)
206	614 196 1293	SLIDE, HEAD SLIDE PLATE
207	614 196 1279	SLIDE, HEAD PANEL
208	614 196 1286	SLIDE, RC PLATE
209	614 196 1903	SPRING WIRE, PINCH ROLLER SPRING (F)
210	412 029 8408	SPECIAL SCREW, 1.7X4MM
211	614 196 1095	BOSS, HP COLLER
212	614 196 1743	SPRING COIL, RC PLATE
213	412 027 3009	SPECIAL SCREW, CAMERA S TITE 1.7X3MM
214	614 196 1132	BOSS, CONTROL ARM COLLAR
215	614 196 1484	LEVER, AUTO CONTROL ARM (F)
216	614 196 1491	LEVER, AUTO CONTROL ARM (R)
217	412 027 3306	SPECIAL WASHER, 1.75X4X0.3MM
218	412 026 1808	SPECIAL WASHER, 1.45X3.8X0.5MM
219	412 013 8902	SPECIAL WASHER, 2X3.5X0.3MM
220	412 027 2408	SPECIAL SCREW, CAMERA S TITE 1.7X8.5MM
221	412 013 4904	SPECIAL WASHER, 1.2X3X0.25MM
222	614 204 5718	LEVER PINCH ROLLER ASSY, PINCH ROLLER ASSY (F)
223	412 013 4904	SPECIAL WASHER, 1.2X3X0.25MM
224	614 204 5725	LEVER PINCH ROLLER ASSY, PINCH ROLLER ASSY (R)
225	412 003 8707	SPECIAL SCREW, P TITE 2X6MM
226	614 196 4188	SUB CHASSIS ASSY
227	412 027 2903	SPECIAL SCREW, C TITE 2X10MM
228	412 013 7608	SPECIAL WASHER, 2.1X5X0.5MM
229	614 196 1538	LEVER, TURN OVER ARM
230	614 196 1965	SPRING WIRE, TURN OVER
231	614 204 5749	LEVER ASSY, T GEAR ARM ASSY (R)
232	614 196 1989	SPRING WIRE, T GEAR ARM SP (R)
233	614 196 1507	LEVER, RC ARM
234	614 204 6425	LEVER ASSY, T GEAR ARM ASSY (F)
235	614 196 1972	SPRING WIRE, T GEAR ARM SPRING (R)
236	614 196 4171	SUB CHASSIS ASSY, BUTTON BASE ASSY
237	614 196 1477	LEVER, F.FWD CONTROL ARM
238	614 196 1378	SLIDE, SLIDE PLATE
239	614 196 5871	SLIDE ASSY, LOCK ACTUATOR ASSY
240	614 196 1934	SPRING WIRE, CANCEL PLATE
241	614 204 6418	SLIDE ASSY, SW ACTUATOR ASSY
242	614 196 1811	SPRING COIL, PULL ARM
243	614 196 4249	SLIDE ASSY, DIRECTION BUTTON ASSY
244	614 198 7392	SLIDE, STOP/EJECT BUTTON LEVER
245	614 196 1323	SLIDE, F.FWD BUTTON LEVER
246	614 196 1330	SLIDE, REW BUTTON LEVER
247	614 198 7408	SLIDE, PLAY BUTTON LEVER
248	614 196 4256	SLIDE ASSY, REVERSE MODE BUTTON LEVER ASSY
249	614 196 4195	BRACKET SWITCH ASSY
250	412 027 2705	SPECIAL SCREW, CAMERA S TITE, 1.7X2.5MM
251	614 196 2054	SWITCH, PIRECTION, TAPE "A"
252	412 030 2501	SPECIAL SCREW, 2X4MM
253	412 031 0902	SPECIAL WASHER, 2.8X6X0.5MM
301	614 204 5695	REEL ASSY, SUPPLY

PARTS LIST

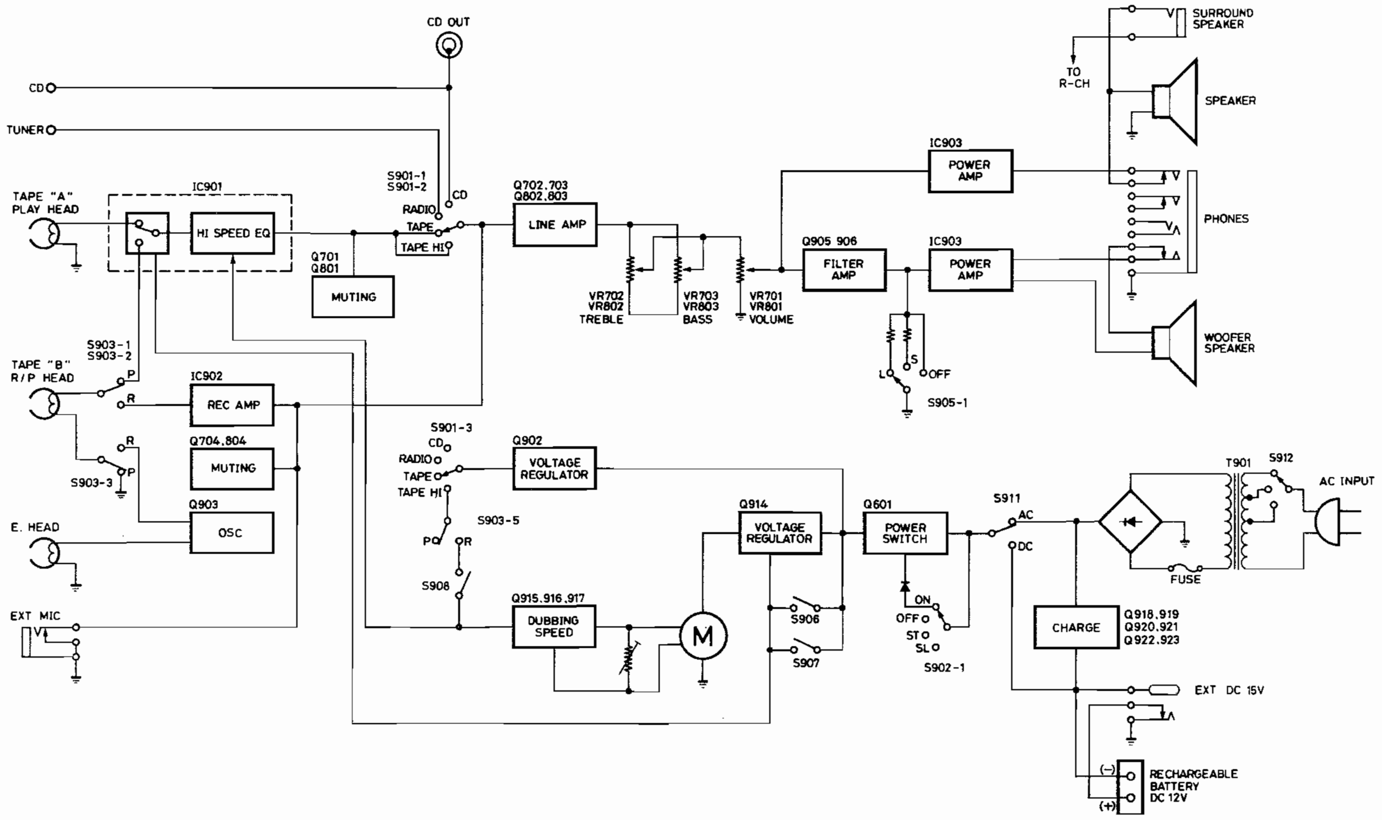
Ref. No.	Part No.	Description
302	614 151 7179	SPRING COIL, BACK TENSION
303	614 204 5701	REEL ASSY, TAKE-UP
304	614 204 6050	LEVER, SENSOR
305	614 140 1508	LEVER, RECORD SAFETY
306	614 134 9046	GEAR, F.FWD
307	614 196 1897	SPRING PLATE, CASSETTE
308	412 027 2606	SPECIAL SCREW, C TITE 2X3MM
309	614 067 2770	CHASSIS ASSY
310	614 152 1305	SPRING WIRE, RECORD BUTTON SPRING
311	412 026 2201	SPECIAL SCREW, P TITE 2X5MM
312	614 152 1282	SPRING WIRE, PS LEVER
313	614 024 3437	SWITCH, TAPE "B" POWER
315	412 026 2300	SPECIAL SCREW, CAMERA TARRING 2X4.5MM
316	614 152 1275	SPRING WIRE, E ACTUATOR
317	614 134 9053	GEAR, CAM
318	412 013 5000	SPECIAL WASHER, 1.2X3.8X0.3MM
319	614 140 1522	LEVER, EJECT SLIDE LEVER
320	412 003 8103	SPECIAL SCREW, MOTOR COLLAR
321	614 126 6831	CUSHION, RUBBER, MOTOR
322	614 196 2801	CUSHION, ANTI-VIB, FELT MAT
323	614 196 2818	CUSHION, ANTI-VIB.FELT MAT
324	614 196 2795	BRACKET MOTOR
325	614 196 1453	LEVER, P KICK LEVER "B"
326	614 196 1101	BOSS, COLLAR "B"
327	411 025 2205	SCR S-TPG PAN 2X6MM
328	412 026 2003	SPECIAL SCREW, +C TITE, 2X4MM
329	614 204 6326	COMMUTATE MOTOR ASSY
330	614 196 1439	LEVER, P KICK LEVER
331	412 005 8101	SPECIAL SCREW, PK COLLAR
332	614 196 1781	SPRING COIL, P KICK LEVER
333	614 204 5732	PULLEY ASSY, R/F PULLEY ASSY
334	614 195 5087	SQUARE BELT, R/F BELT
335	412 013 8902	SPECIAL WASHER, 2X3.5X0.3MM
336	614 068 1871	FLYWHEEL DISK ASSY
337	614 204 4681	SQUARE BELT, MAIN
401	412 027 4600	SPECIAL SCREW, 2X8MM
402	614 021 7834	MAGNETIC HEAD, ERASE HEAD
403	614 151 5090	SPRING COIL, ERASE HEAD
404	412 004 3701	SPECIAL SCREW, BIND 2X3MM
405	614 021 8862	MAGNETIC HEAD, RECORD/PLATE HEAD
406	412 026 1709	SPECIAL SCREW, HEAD AZIMUTH 2X7MM
407	614 151 7162	SPRING COIL, HEAD AZIMUTH
408	614 196 0470	BRACKET HEAD, HEAD BASE
409	614 196 0494	SLIDE, HEAD PANEL
410	614 210 3432	SPRING WIRE, PANEL P SPRING
411	614 210 3302	LEVER PINCH ROLLER ASSY
412	614 140 1614	LEVER, SENSING
413	614 152 1299	SPRING WIRE, M CONTROL
414	614 151 8312	SPRING PLATE, GEAR PLATE SPRING
415	614 070 0916	LEVER ASSY, GEAR PLATE ASSY
416	412 026 1808	SPECIAL WASHER, 1.45X3.8X0.5MM
417	614 067 3258	SUB CHASSIS ASSY, BASE ASSY
418	614 129 0676	BOSS, PR STOPPER
419	614 139 1137	SLIDE, SWITCH ACTUATOR
420	614 140 1539	LEVER, EJECT KICK LEVER
421	614 139 1120	SLIDE, PUSH BUTTON ACTUATOR
422	614 152 1244	SPRING WIRE, P CONTROL
423	614 140 1591	LEVER, PAUSE LEVER
424	614 151 7186	SPRING COIL, P STOPPER
425	614 129 0669	BOSS, P STOPPER
426	614 140 1584	LEVER, PAUSE BUTTON LEVER
427	614 140 1577	LEVER, STOP/EJECT BUTTON LEVER
428	614 140 1560	LEVER, F.FWD BUTTON LEVER
429	614 140 1553	LEVER, REW BUTTON LEVER
430	614 140 1607	LEVER, PLAY BUTTON LEVER
431	614 140 1546	LEVER, RECORD BUTTON LEVER
432	614 152 1251	SPRING WIRE, BUTTON LEVER SRRING A
433	614 152 1268	SPRING WIRE, BUTTON LEVER SRRING B

BLOCK DIAGRAM

TUNER SECTION

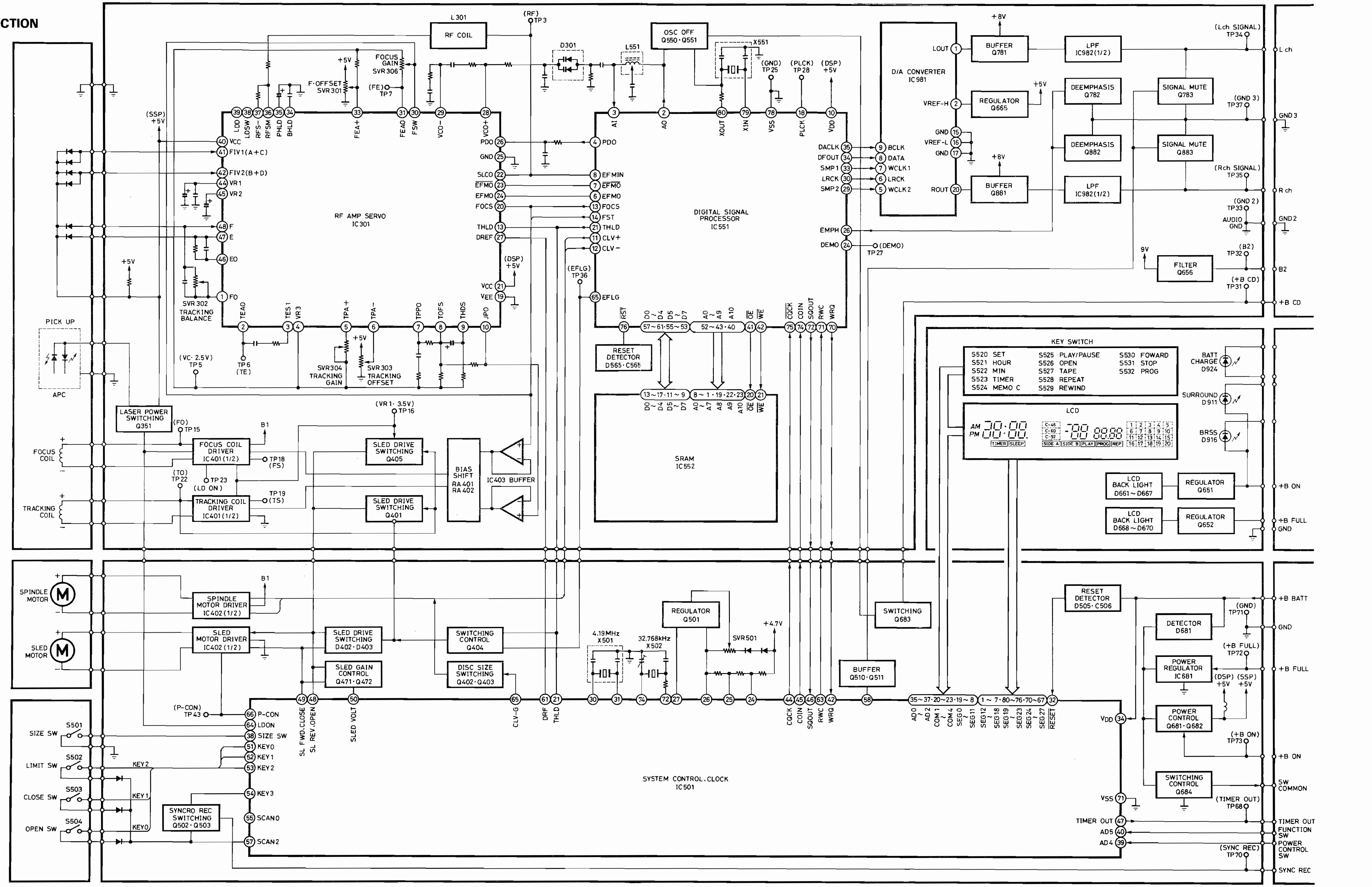

ROD ANTENNA
IC101 FM FRONT END
Q102 RIPPLE FILTER
+B
L
R
S1-1
FM
SW2
SW1
MW
B.P.F
L101
VC-1
L102
VC-2
T201 FM IF
CF201
T203 AM IF
CF202
Q101 SW RF AMP
S1-3
S1-4
S1-5
S1-6
S1-7
S1-8
IC201 FM/AM IF, DETECTOR & FM MPX
T202 FM IF
SVR201 FM VCO
VC-3
VC-4
L104 SW2
L105-A SW1
L105-B MW
L106 SW2
L107 SW1
L108 MW
VR101 FINE TUNING

AMPLIFIER SECTION


CD OUT
CD
TUNER
TAPE "A" PLAY HEAD
IC901
HI SPEED EQ
S901-1
S901-2
RADIO
TAPE
TAPE HI
Q701 Q801
MUTING
Q702,703 Q802,803
LINE AMP
VR702 VR802 TREBLE
VR703 VR803 BASS
VR701 VR801 VOLUME
Q905 906
FILTER AMP
IC903
POWER AMP
TO R-CH
SURROUND SPEAKER
SPEAKER
PHONES
WOOFER SPEAKER
S905-1
OFF
TAPE "B" R/P HEAD
S903-1
S903-2
IC902
REC AMP
Q704,804
MUTING
S903-3
Q903
OSC
E. HEAD
EXT MIC
S901-3
Q902
VOLTAGE REGULATOR
S903-5
S908
Q915,916,917
DUBBING SPEED
M
Q914
VOLTAGE REGULATOR
S906
S907
Q601
POWER SWITCH
ON
OFF
ST
SL
S902-1
S911
AC
DC
T901
S912
AC INPUT
FUSE
CHARGE
Q918,919 Q920,921 Q922,923
EXT DC 15V
RECHARGEABLE BATTERY DC 12V

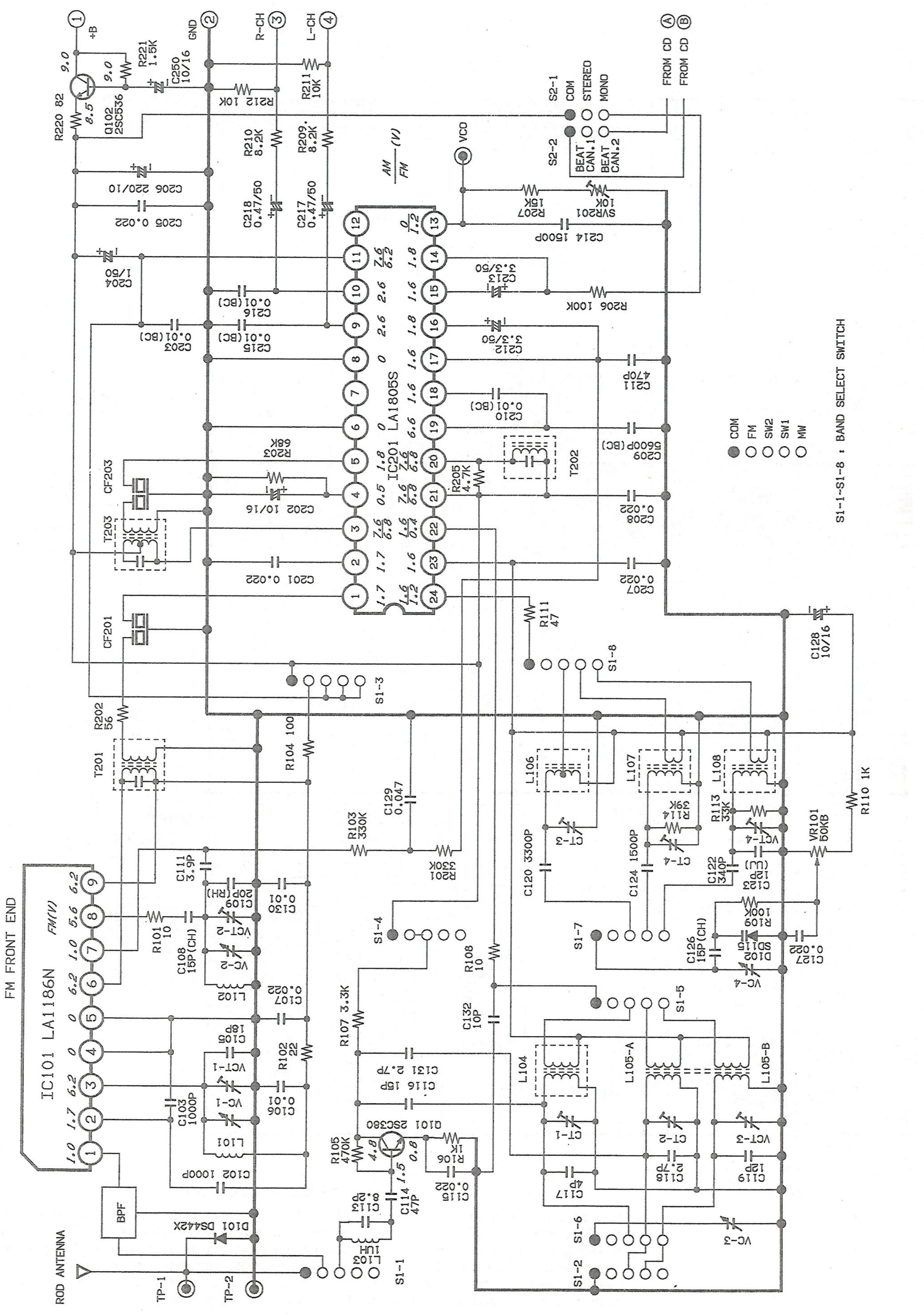
BLOCK DIAGRAM

CD SECTION



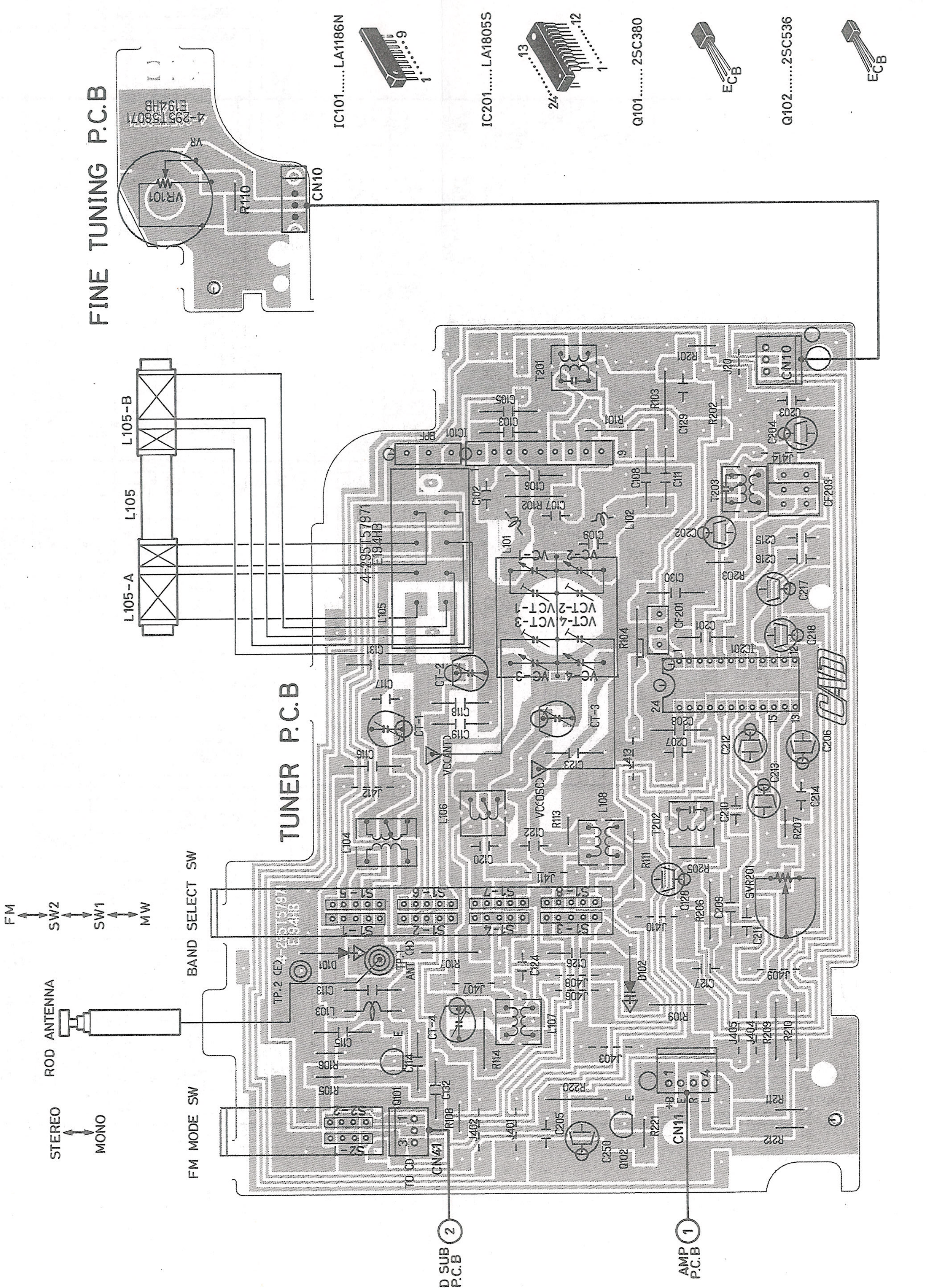
PICK UP
APC
FOCUS COIL
TRACKING COIL
SPINDLE MOTOR
SLED MOTOR
SIZE SW S501
LIMIT SW S502
CLOSE SW S503
OPEN SW S504
KEY2
KEY1
KEY0
L301 RF COIL
(RF) TP3
FOCUS GAIN SVR306
F·OFFSET SVR301
(FE) TP7
(SSP) +5V
RF AMP SERVO IC301
SVR302 TRACKING BALANCE
(VC: 2.5V) TP5
TP6 (TE)
SVR304 TRACKING GAIN
SVR303 TRACKING OFFSET
(VR1: 3.5V) TP16
LASER POWER SWITCHING Q351
(FO) TP15
FOCUS COIL DRIVER IC401(1/2)
TP18 (FS)
(TO) TP22
TP23 (LD ON)
TRACKING COIL DRIVER IC401(1/2)
TP19 (TS)
SLED DRIVE SWITCHING Q405
SLED DRIVE SWITCHING Q401
BIAS SHIFT RA401 RA402
IC403 BUFFER
D301
L551
OSC OFF Q550·Q551
X551
(GND) TP25
(PLCK) TP28
(DSP) +5V
DIGITAL SIGNAL PROCESSOR IC551
(EFLG) TP36
(DEMO) TP27
RESET DETECTOR D565·C565
SRAM IC552
D/A CONVERTER IC981
BUFFER Q781
BUFFER Q881
REGULATOR Q665
LPF IC982(1/2)
DEEMPHASIS Q782
DEEMPHASIS Q882
SIGNAL MUTE Q783
SIGNAL MUTE Q883
FILTER Q656
(Lch SIGNAL) TP34
(GND 3) TP37
(Rch SIGNAL) TP35
(GND 2) TP33
AUDIO GND
(B2) TP32
(+B CD) TP31
L ch
GND 3
R ch
GND 2
B2
+B CD
KEY SWITCH
S520 SET
S521 HOUR
S522 MIN
S523 TIMER
S524 MEMO C
S525 PLAY/PAUSE
S526 OPEN
S527 TAPE
S528 REPEAT
S529 REWIND
S530 FOWARD
S531 STOP
S532 PROG
LCD
BATT CHARGE D924
SURROUND D911
BRSS D916
LCD BACK LIGHT D661~D667
LCD BACK LIGHT D668~D670
REGULATOR Q651
REGULATOR Q652
+B ON
+B FULL
GND
SPINDLE MOTOR DRIVER IC402(1/2)
SLED MOTOR DRIVER IC402(1/2)
SLED DRIVE SWITCHING D402·D403
SLED GAIN CONTROL Q471·Q472
SWITCHING CONTROL Q404
DISC SIZE SWITCHING Q402·Q403
(P-CON) TP43
SYNCRO REC SWITCHING Q502·Q503
4.19MHz X501
32.768kHz X502
REGULATOR Q501
SVR501
+4.7V
SWITCHING Q683
BUFFER Q510·Q511
SYSTEM CONTROL, CLOCK IC501
RESET DETECTOR D505·C506
DETECTOR D681
POWER REGULATOR IC681
POWER CONTROL Q681·Q682
SWITCHING CONTROL Q684
(GND) TP71
(+B FULL) TP72
(DSP) (SSP) +5V +5V
(+B ON) TP73
(TIMER OUT) TP68
(SYNC REC) TP70
+B BATT
SW COMMON
TIMER OUT
FUNCTION SW
POWER CONTROL SW
SYNC REC

SCHEMATIC DIAGRAM (TUNER)



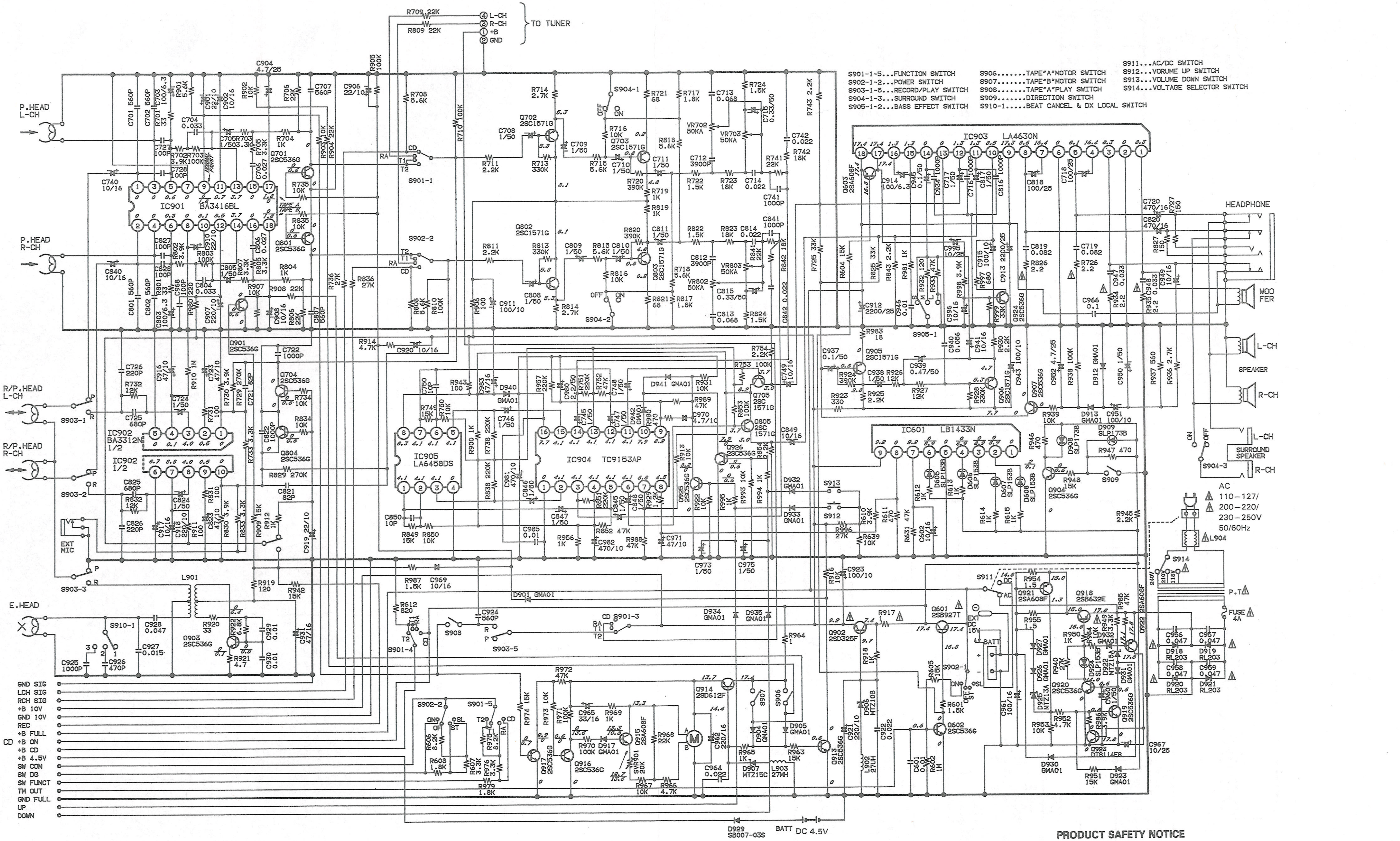
ROD ANTENNA
TP-1
TP-2
BPF
D101 DS442X
FM FRONT END
IC101 LA1186N
FM(V)
Q101 2SC380
Q102 2SC536
IC201 LA1805S
AM/FM (V)
VCO
+B
GND
R-CH
L-CH
S2-1 COM STEREO MONO
S2-2 BEAT CAN.1 BEAT CAN.2
FROM CD Ⓐ
FROM CD Ⓑ
COM FM SW2 SW1 MW
S1-1~S1-8 : BAND SELECT SWITCH

WIRING DIAGRAM (TUNER)



FINE TUNING P.C.B
VR101
VR
R110
CN10
IC101......LA1186N
IC201......LA1805S
Q101......2SC380
Q102......2SC536
TUNER P.C.B
L105-A
L105
L105-B
BAND SELECT SW
FM SW2 SW1 MW
ROD ANTENNA
FM MODE SW
STEREO MONO
CD SUB P.C.B ②
AMP P.C.B ①

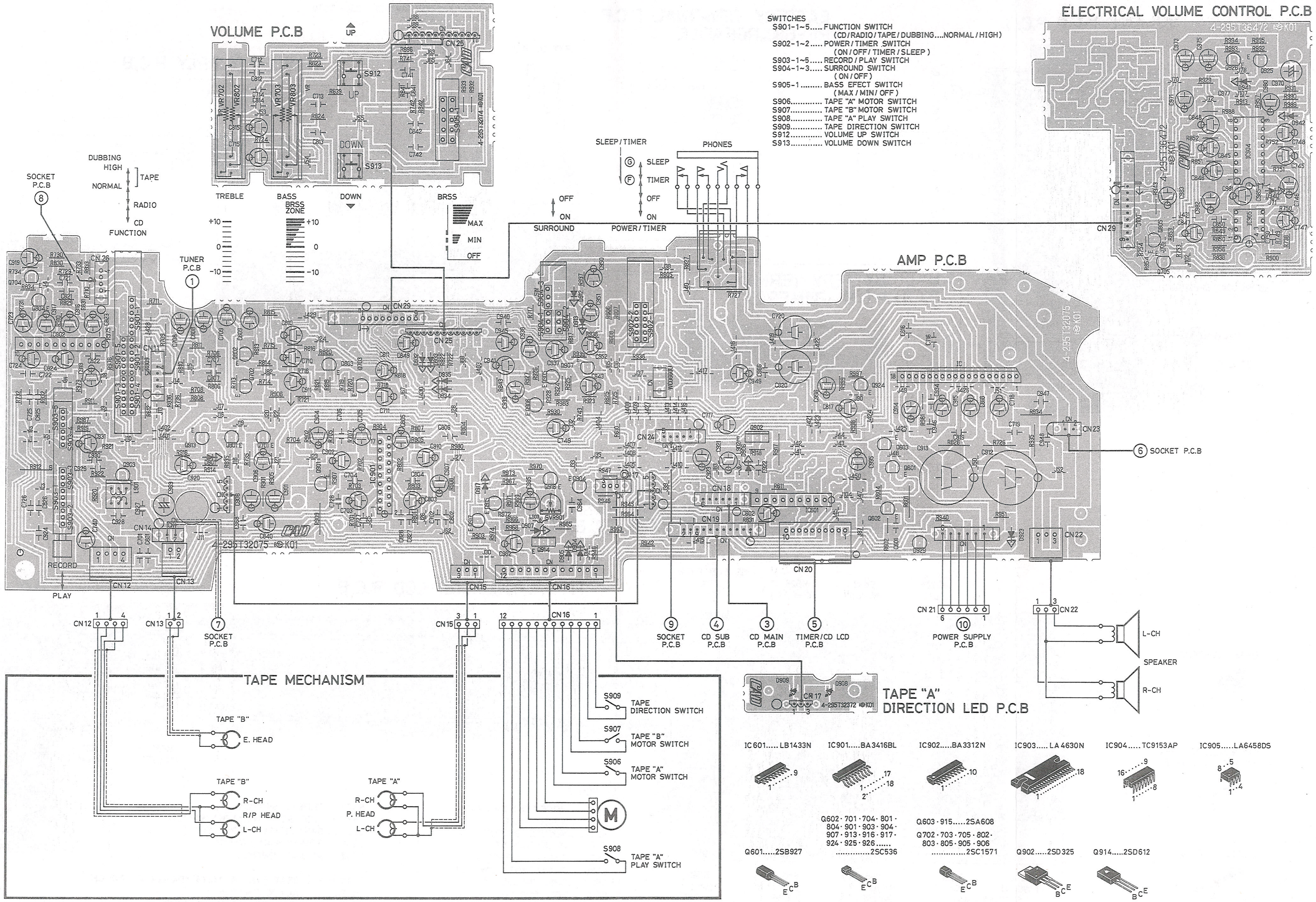
SCHEMATIC DIAGRAM (AMP.)


S901-1~5...FUNCTION SWITCH
S902-1~2...POWER SWITCH
S903-1~5...RECORD/PLAY SWITCH
S904-1~3...SURROUND SWITCH
S905-1~2...BASS EFFECT SWITCH
S906.......TAPE"A"MOTOR SWITCH
S907.......TAPE"B"MOTOR SWITCH
S908.......TAPE"A"PLAY SWITCH
S909.......DIRECTION SWITCH
S910-1.....BEAT CANCEL & DX LOCAL SWITCH
S911...AC/DC SWITCH
S912...VORUME UP SWITCH
S913...VOLUME DOWN SWITCH
S914...VOLTAGE SELECTOR SWITCH
TO TUNER
L-CH
R-CH
+B
GND
P.HEAD L-CH
P.HEAD R-CH
R/P.HEAD L-CH
R/P.HEAD R-CH
E.HEAD
EXT MIC
IC901 BA3416BL
IC902 BA3312N 1/2
IC903 LA4630N
IC904 TC9153AP
IC905 LA6458DS
IC601 LB1433N
HEADPHONE
WOO FER
SPEAKER
SURROUND SPEAKER
AC 110-127/ 200-220/ 230-250V 50/60Hz
FUSE 4A
P.T
BATT DC 4.5V
D929 S8007-03S
TO CD
GND SIG
LCH SIG
RCH SIG
+B 10V
GND 10V
REC
+B FULL
+B ON
+B CD
+B 4.5V
SW COM
SW DG
SW FUNCT
TM OUT
GND FULL
UP
DOWN

PRODUCT SAFETY NOTICE

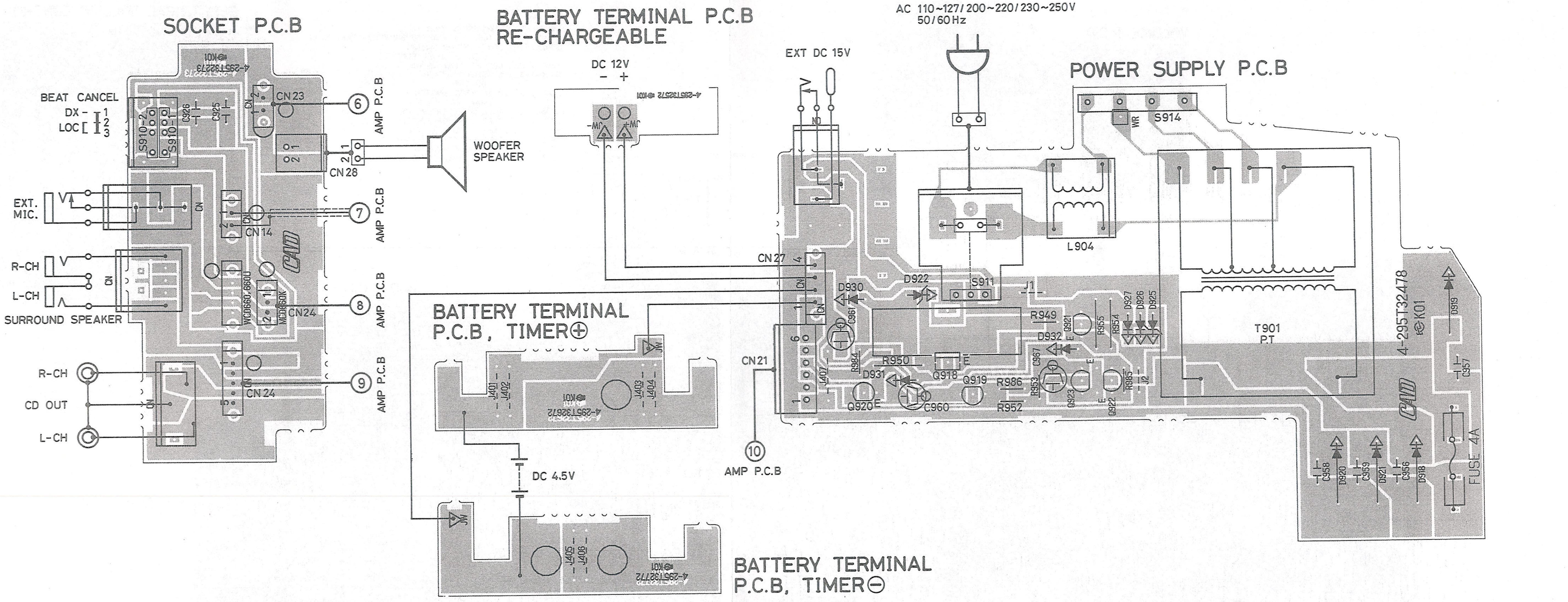
Each percaution in this manual should be followed during servicing. Components identified with the IEC symbol⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before erturning the product to the customer.

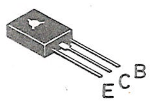
WIRING DIAGRAM (AMP. ①)

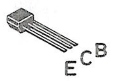

VOLUME P.C.B
ELECTRICAL VOLUME CONTROL P.C.B
AMP P.C.B
TAPE "A" DIRECTION LED P.C.B
TAPE MECHANISM
TREBLE
BASS
BRSS ZONE
BRSS
MAX
MIN
OFF
UP
DOWN
S912
S913
DUBBING
HIGH
NORMAL
TAPE
RADIO
CD
FUNCTION
SOCKET P.C.B
TUNER P.C.B
OFF
ON
SURROUND
SLEEP/TIMER
SLEEP
TIMER
OFF
ON
POWER/TIMER
PHONES
RECORD
PLAY
CN12
CN13
CN15
CN16
CN20
CN21
CN22
CN23
CN25
CN29
SOCKET P.C.B
CD SUB P.C.B
CD MAIN P.C.B
TIMER/CD LCD P.C.B
POWER SUPPLY P.C.B
SPEAKER
L-CH
R-CH
S909 TAPE DIRECTION SWITCH
S907 TAPE "B" MOTOR SWITCH
S906 TAPE "A" MOTOR SWITCH
S908 TAPE "A" PLAY SWITCH
M
TAPE "B" E. HEAD
TAPE "B" R-CH R/P HEAD L-CH
TAPE "A" R-CH P. HEAD L-CH
IC601.....LB1433N
IC901.....BA3416BL
IC902.....BA3312N
IC903.....LA4630N
IC904.....TC9153AP
IC905.....LA6458DS
Q601.....2SB927
Q602·701·704·801·804·901·903·904·907·913·916·917·924·925·926...........2SC536
Q603·915.....2SA608
Q702·703·705·802·803·805·905·906...........2SC1571
Q902.....2SD325
Q914.....2SD612
E C B
B C E

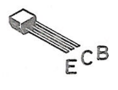
SWITCHES
S901-1~5..... FUNCTION SWITCH
(CD/RADIO/TAPE/DUBBING....NORMAL/HIGH)
S902-1~2..... POWER/TIMER SWITCH
(ON/OFF/TIMER/SLEEP)
S903-1~5..... RECORD/PLAY SWITCH
S904-1~3..... SURROUND SWITCH
(ON/OFF)
S905-1......... BASS EFECT SWITCH
(MAX/MIN/OFF)
S906............ TAPE "A" MOTOR SWITCH
S907............ TAPE "B" MOTOR SWITCH
S908............ TAPE "A" PLAY SWITCH
S909............ TAPE DIRECTION SWITCH
S912............ VOLUME UP SWITCH
S913............ VOLUME DOWN SWITCH

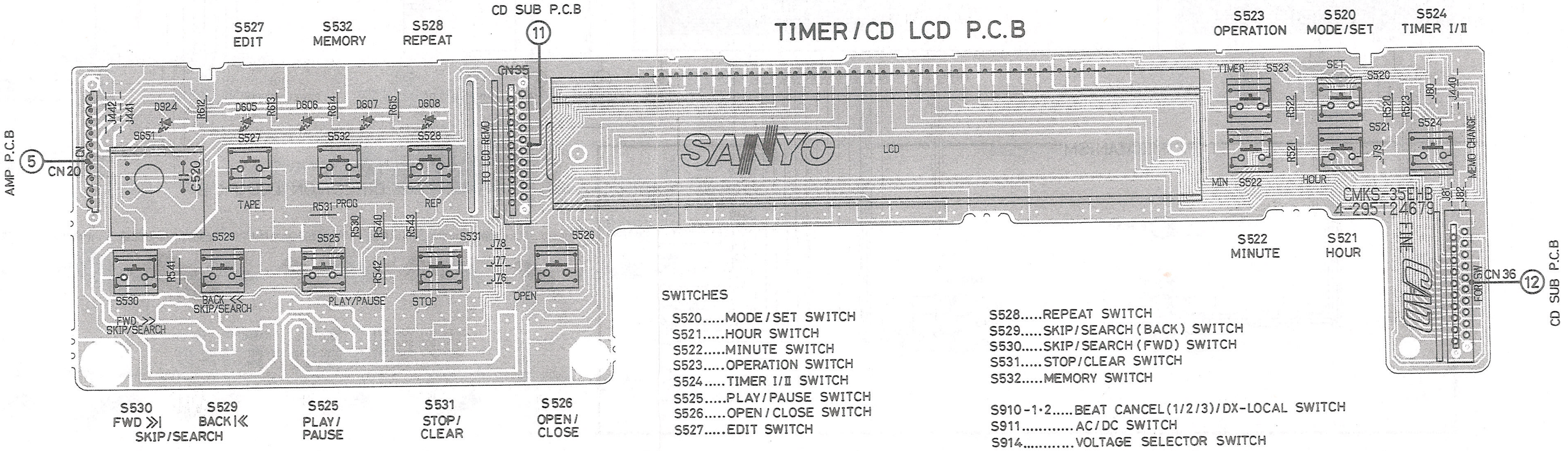
WIRING DIAGRAM (AMP. ②)


SOCKET P.C.B
BEAT CANCEL
DX-
LOC
1
2
3
S910-2
S910-1
C926
C925
CN23
CN28
CN14
CN24
CN24
WOOFER SPEAKER
EXT. MIC.
R-CH
L-CH
SURROUND SPEAKER
R-CH
CD OUT
L-CH
⑥ AMP P.C.B
⑦ AMP P.C.B
⑧ AMP P.C.B
⑨ AMP P.C.B
BATTERY TERMINAL P.C.B RE-CHARGEABLE
DC 12V
- +
BATTERY TERMINAL P.C.B, TIMER⊕
J401
J402
J403
J404
DC 4.5V
BATTERY TERMINAL P.C.B, TIMER⊖
J405
J406
EXT DC 15V
AC 110~127/200~220/230~250V 50/60Hz
POWER SUPPLY P.C.B
S914
S911
L904
CN27
CN21
D930
D922
D931
D932
D927
D926
D925
R949
R950
R952
R953
R955
R954
R984
R985
R986
Q918
Q919
Q920
Q921
Q922
Q923
C960
C961
C967
J407
J1
J2
T901 P.T
4-295T32478
D919
C957
C958
D920
C959
D921
C956
D918
FUSE 4A
⑩ AMP P.C.B


Q918.....2SB632


Q919·920.....2SC536
Q921·922.....2SA608


Q923.....DTC114

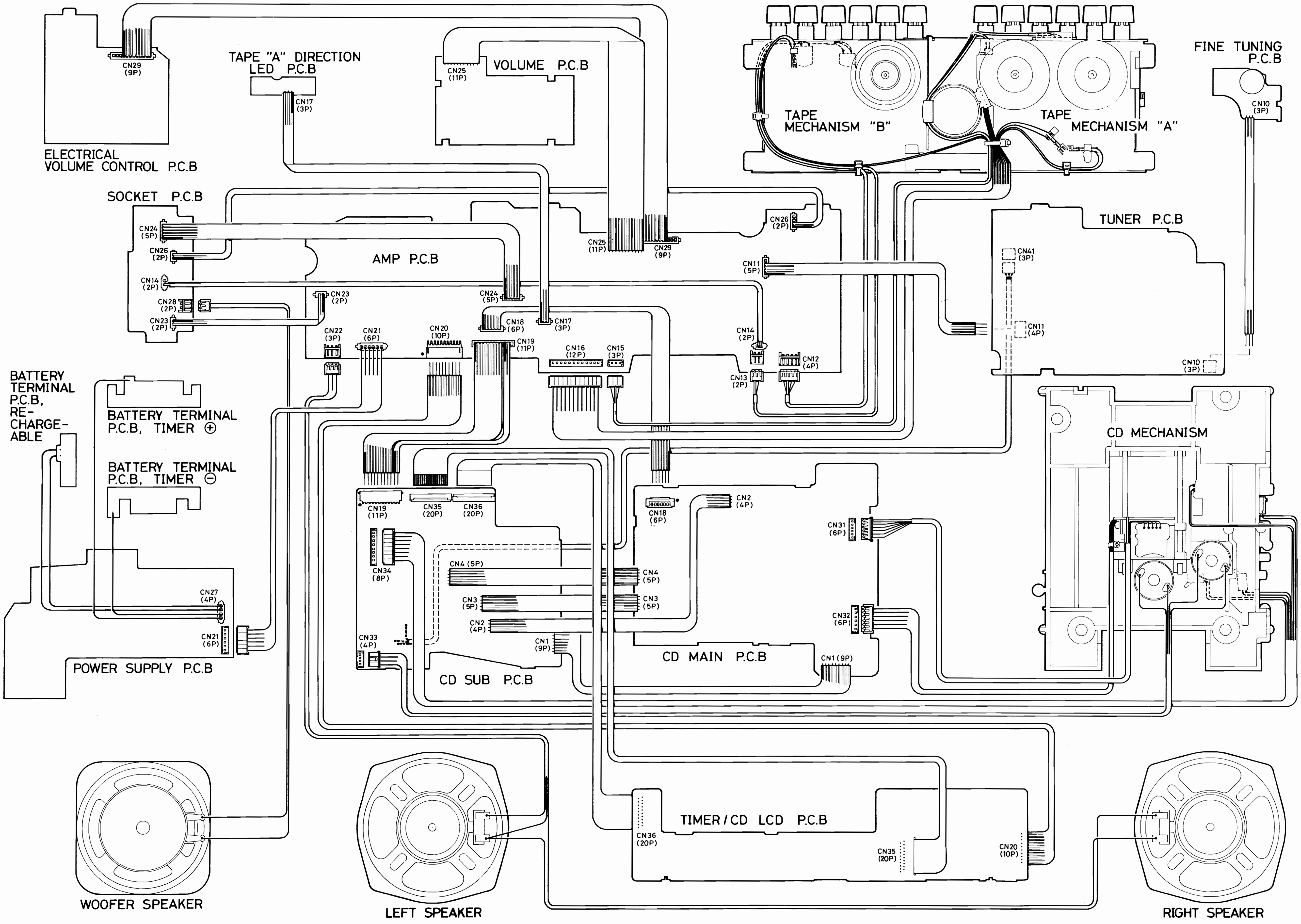

TIMER/CD LCD P.C.B
CD SUB P.C.B ⑪
S527 EDIT
S532 MEMORY
S528 REPEAT
S523 OPERATION
S520 MODE/SET
S524 TIMER I/II
⑤ AMP P.C.B
CN20
CN35
S651
C520
D924
D605
D606
D607
D608
R612
R613
R614
R615
S527
S532
S528
TAPE
PROG
REP
S529
S525
S531
S526
S530
BACK << SKIP/SEARCH
FWD >> SKIP/SEARCH
PLAY/PAUSE
STOP
OPEN
TO LCD REMO
SANYO
LCD
TIMER
S523
SET
S520
S521
S522
S524
MIN
HOUR
MEMO CHANGE
CMKS-35EHB
4-295T24679
S522 MINUTE
S521 HOUR
CN36 ⑫ CD SUB P.C.B
S530 FWD >>| SKIP/SEARCH
S529 BACK |<<
S525 PLAY/PAUSE
S531 STOP/CLEAR
S526 OPEN/CLOSE

SWITCHES

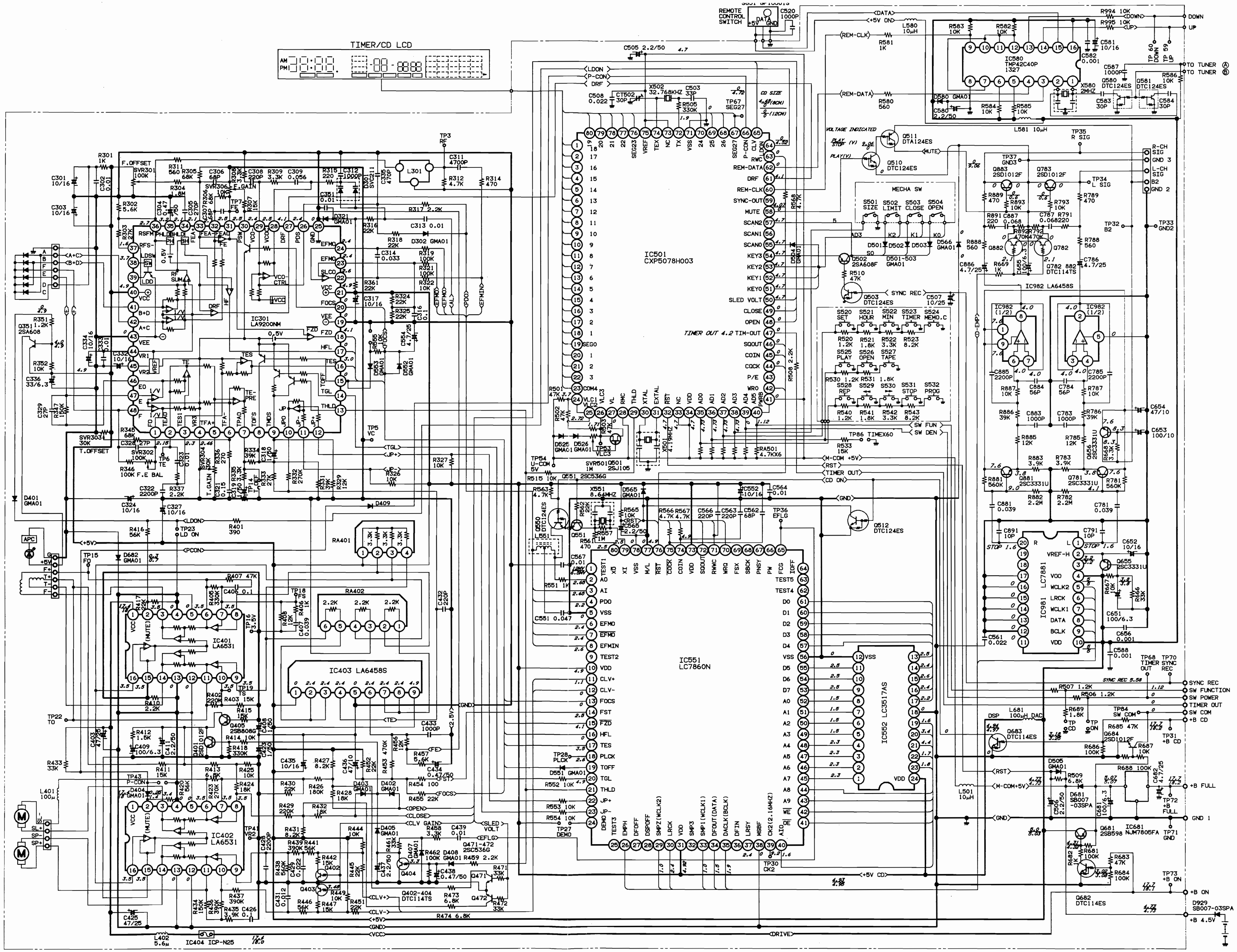
S520.....MODE/SET SWITCH
S521.....HOUR SWITCH
S522.....MINUTE SWITCH
S523.....OPERATION SWITCH
S524.....TIMER I/II SWITCH
S525.....PLAY/PAUSE SWITCH
S526.....OPEN/CLOSE SWITCH
S527.....EDIT SWITCH
S528.....REPEAT SWITCH
S529.....SKIP/SEARCH (BACK) SWITCH
S530.....SKIP/SEARCH (FWD) SWITCH
S531.....STOP/CLEAR SWITCH
S532.....MEMORY SWITCH

S910-1·2.....BEAT CANCEL(1/2/3)/DX-LOCAL SWITCH
S911............AC/DC SWITCH
S914............VOLTAGE SELECTOR SWITCH

CONNECTION

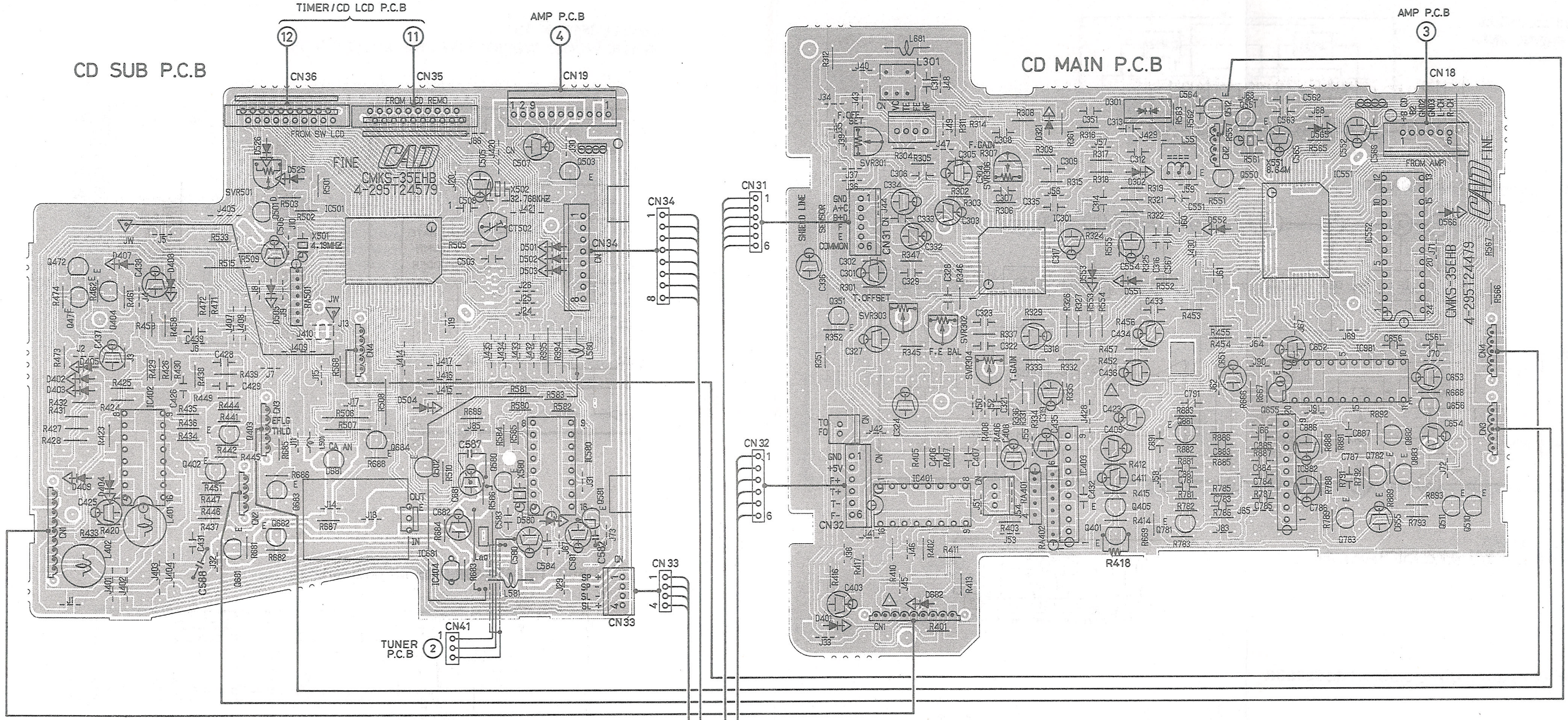

CN29 (9P)
ELECTRICAL VOLUME CONTROL P.C.B
TAPE "A" DIRECTION LED P.C.B
CN17 (3P)
CN25 (11P)
VOLUME P.C.B
TAPE MECHANISM "B"
TAPE MECHANISM "A"
FINE TUNING P.C.B
CN10 (3P)
SOCKET P.C.B
CN24 (5P)
CN26 (2P)
CN14 (2P)
CN28 (2P)
CN23 (2P)
AMP P.C.B
CN25 (11P)
CN29 (9P)
CN26 (2P)
CN11 (5P)
CN23 (2P)
CN24 (5P)
CN18 (6P)
CN17 (3P)
CN22 (3P)
CN21 (6P)
CN20 (10P)
CN19 (11P)
CN16 (12P)
CN15 (3P)
CN14 (2P)
CN13 (2P)
CN12 (4P)
TUNER P.C.B
CN41 (3P)
CN11 (4P)
CN10 (3P)
BATTERY TERMINAL P.C.B, RE-CHARGE-ABLE
BATTERY TERMINAL P.C.B, TIMER ⊕
BATTERY TERMINAL P.C.B, TIMER ⊖
CD MECHANISM
CN19 (11P)
CN35 (20P)
CN36 (20P)
CN34 (8P)
CN4 (5P)
CN3 (5P)
CN2 (4P)
CN1 (9P)
CN33 (4P)
CD SUB P.C.B
CN18 (6P)
CN2 (4P)
CN4 (5P)
CN3 (5P)
CN31 (6P)
CN32 (6P)
CN1 (9P)
CD MAIN P.C.B
CN27 (4P)
CN21 (6P)
POWER SUPPLY P.C.B
TIMER/CD LCD P.C.B
CN36 (20P)
CN35 (20P)
CN20 (10P)
WOOFER SPEAKER
LEFT SPEAKER
RIGHT SPEAKER

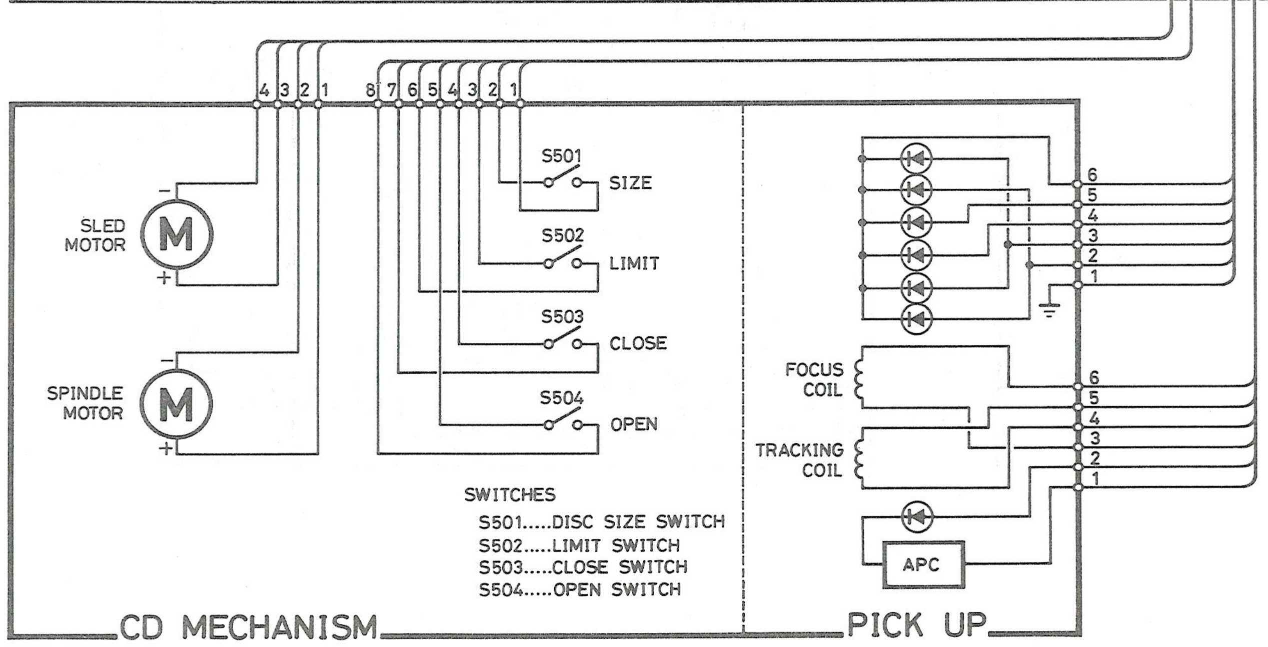
SCHEMATIC DIAGRAM (CD)



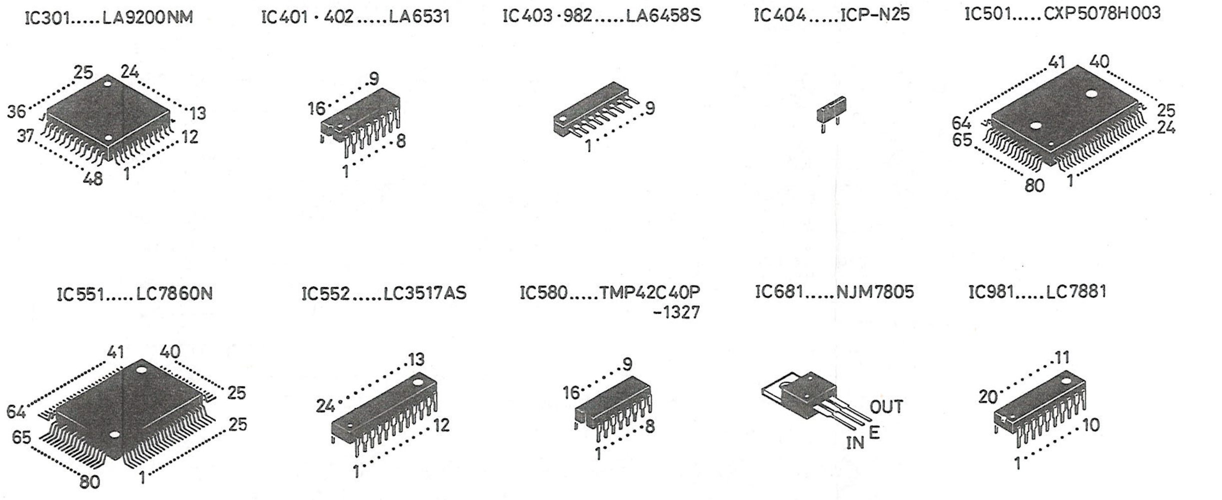
TIMER/CD LCD
REMOTE CONTROL SWITCH
IC580 TMP42C40P 1327
IC501 CXP5078H003
IC301 LA9200NM
IC401 LA6531
IC402 LA6531
IC403 LA6458S
IC404 ICP-N25
IC551 LC7860N
IC552 LC3517AS
IC981 LC7881
IC982 LA6458S
IC681 NJM7805FA
MECHA SW
S501 SIZE
S502 LIMIT
S503 CLOSE
S504 OPEN
S520 SET
S521 HOUR
S522 MIN
S523 TIMER
S524 MEMO.C
S525 PLAY
S526 OPEN
S527 TAPE
S528 REP
S529 CLS
S530 3
S531 STOP
S532 PROG
APC
RA401
RA402
X502 32.768KHZ
X551 8.64MHZ
X580 2MHZ
CD SIZE
VOLTAGE INDICATED
TIMER OUT
DOWN
UP
TO TUNER Ⓐ
TO TUNER Ⓑ
R-CH SIG
GND 3
L-CH SIG
B2
GND 2
SYNC REC
SW FUNCTION
SW POWER
TIMER OUT
SW COM
+B CD
+B FULL
GND 1
+B ON
+B 4.5V
D929 SB007-03SPA

WIRING DIAGRAM (CD)


TIMER/CD LCD P.C.B
⑫
⑪
AMP P.C.B
④
CD SUB P.C.B
CN36
CN35
CN19
FROM SW LCD
FROM LCD REMO
CMKS-35EHB
4-295T24579
FINE
CN34
CN33
CN41
TUNER P.C.B
②
CN31
CN32
SHIELD LINE
SENSOR
COMMON
AMP P.C.B
③
CD MAIN P.C.B
CN18
FROM AMP
CMKS-35EHB
4-295T24479
FINE
F.OFF SET
T.OFFSET
F.E BAL
F.GAIN
T.GAIN
R418

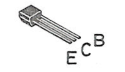

SLED MOTOR
SPINDLE MOTOR
S501
SIZE
S502
LIMIT
S503
CLOSE
S504
OPEN
FOCUS COIL
TRACKING COIL
APC
CD MECHANISM
PICK UP

SWITCHES
S501.....DISC SIZE SWITCH
S502.....LIMIT SWITCH
S503.....CLOSE SWITCH
S504.....OPEN SWITCH

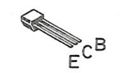

25
24
36
37
48
1
13
12
16
9
1
8
9
1
41
40
64
65
80
1
25
24
13
24
12
1
OUT
IN
E
11
20
10

IC	Type
IC301	LA9200NM
IC401·402	LA6531
IC403·982	LA6458S
IC404	ICP-N25
IC501	CXP5078H003
IC551	LC7860N
IC552	LC3517AS
IC580	TMP42C40P -1327
IC681	NJM7805
IC981	LC7881

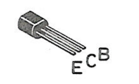
Transistor	Type
Q351·502	2SA608
Q401·684 783·883	2SD1012
Q405	2SB808
Q471·472·551	2SC536
Q501	2SJ105
Q681	2SB598



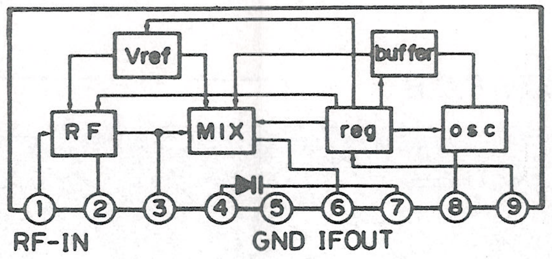
Transistor	Type
Q402·403·404· 682·683·782·882	DTC114
Q503·510·512· 550·580·581	DTC124
Q511	DTA124



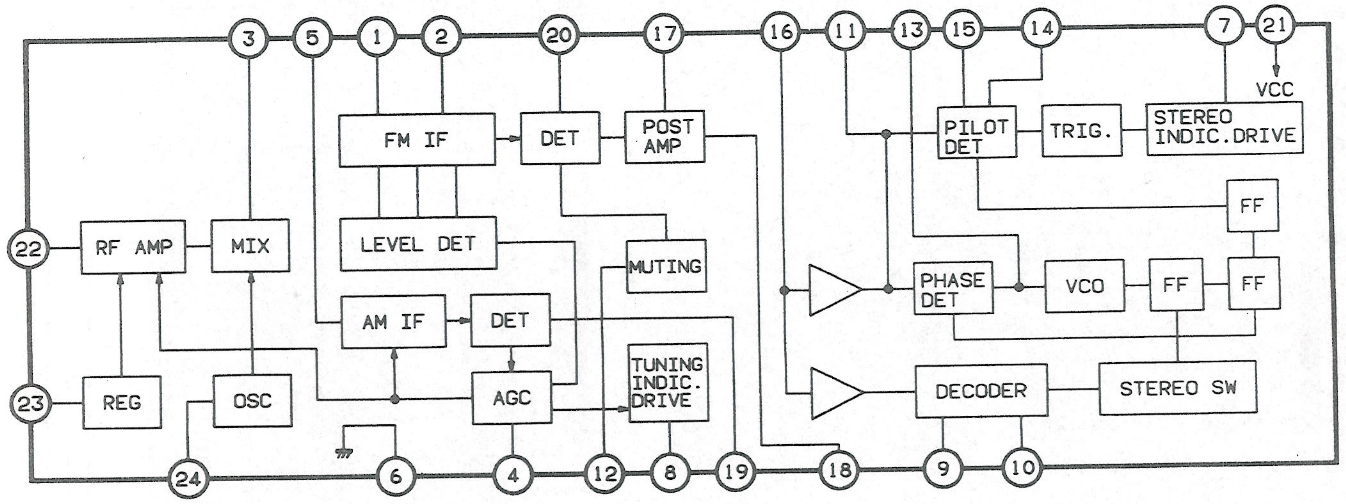
Transistor	Type
Q655·656· 781·881	2SC3331



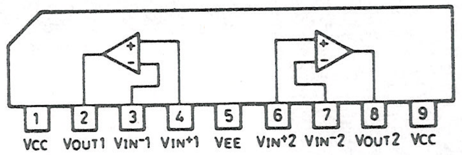
IC101 LA1186N
(FM FRONT END)


Vref
buffer
RF
MIX
reg
osc
1
2
3
4
5
6
7
8
9
RF-IN
GND IFOUT

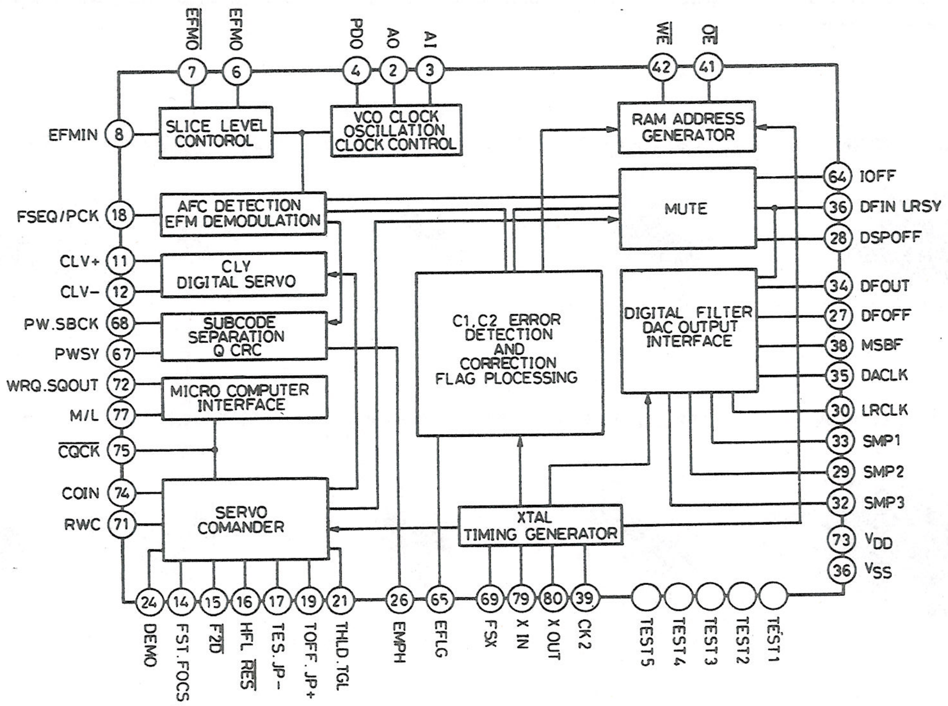
IC201 LA1805SS (AM/FM 1-CHIP RADIO)


3
5
1
2
20
17
16
11
13
15
14
7
21
VCC
FM IF
DET
POST AMP
PILOT DET
TRIG.
STEREO INDIC.DRIVE
FF
LEVEL DET
MUTING
22
RF AMP
MIX
AM IF
DET
PHASE DET
VCO
FF
FF
TUNING INDIC. DRIVE
23
REG
OSC
AGC
DECODER
STEREO SW
24
6
4
12
8
19
18
9
10

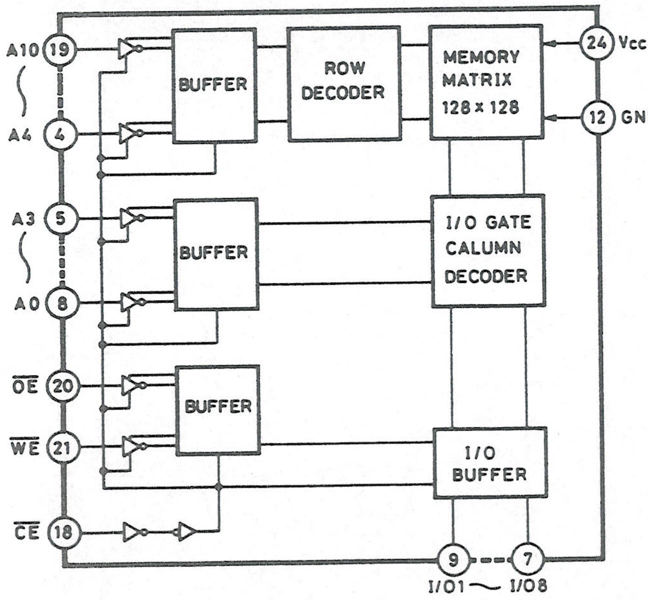
IC403 LA6458S
IC982 (DUAL OPERATIONAL AMPLIFIER)

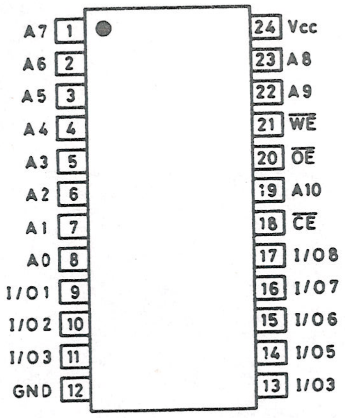

1
2
3
4
5
6
7
8
9
VCC
VOUT1
VIN-1
VIN+1
VEE
VIN+2
VIN-2
VOUT2
VCC

IC551 LC7860N DIGITAL SIGNAL PROCESSOR

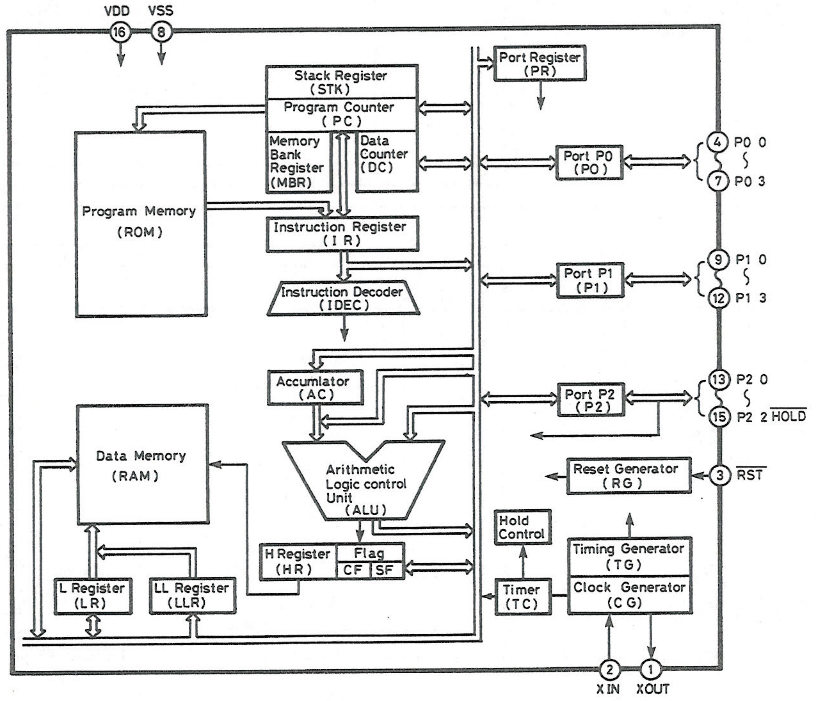

EFMO
EFMO
PDO
AO
AI
WE
OE
7
6
4
2
3
42
41
EFMIN
8
SLICE LEVEL CONTOROL
VCO CLOCK OSCILLATION CLOCK CONTROL
RAM ADDRESS GENERATOR
64
IOFF
FSEQ/PCK
18
AFC DETECTION EFM DEMODULATION
MUTE
36
DFIN LRSY
28
DSPOFF
CLV+
11
CLV-
12
CLY DIGITAL SERVO
C1,C2 ERROR DETECTION AND CORRECTION FLAG PLOCESSING
DIGITAL FILTER DAC OUTPUT INTERFACE
34
DFOUT
27
DFOFF
PW.SBCK
68
PWSY
67
SUBCODE SEPARATION Q CRC
38
MSBF
35
DACLK
WRQ.SQOUT
72
M/L
77
MICRO COMPUTER INTERFACE
30
LRCLK
CQCK
75
33
SMP1
29
SMP2
COIN
74
RWC
71
SERVO COMANDER
XTAL TIMING GENERATOR
32
SMP3
73
VDD
36
VSS
24
14
15
16
17
19
21
26
65
69
79
80
39
DEMO
FST.FOCS
F2D
HFL RES
TES.JP-
TOFF.JP+
THLD.TGL
EMPH
EFLG
FSX
X IN
X OUT
CK2
TEST5
TEST4
TEST3
TEST2
TEST1

IC552 LC3517AM-15
(STATIC RAM 2K WORDX 8-BIT HIGH SPEED C-MOS)


A10
19
A4
4
A3
5
A0
8
OE
20
WE
21
CE
18
BUFFER
BUFFER
BUFFER
ROW DECODER
MEMORY MATRIX 128 x 128
24
Vcc
12
GND
I/O GATE CALUMN DECODER
I/O BUFFER
9
7
I/O1 ~ I/O8

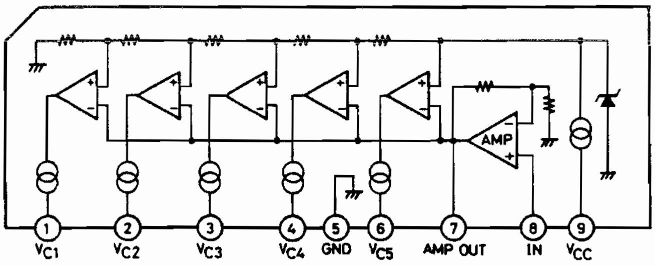

A7 1
A6 2
A5 3
A4 4
A3 5
A2 6
A1 7
A0 8
I/O1 9
I/O2 10
I/O3 11
GND 12
24 Vcc
23 A8
22 A9
21 WE
20 OE
19 A10
18 CE
17 I/O8
16 I/O7
15 I/O6
14 I/O5
13 I/O3

IC580 TMP42C40P (Micro Processor)

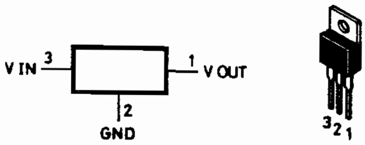

VDD
VSS
16
8
Port Register (PR)
Stack Register (STK)
Program Counter (PC)
Memory Bank Register (MBR)
Data Counter (DC)
Program Memory (ROM)
Port P0 (PO)
4
P0 0
7
P0 3
Instruction Register (I R)
Instruction Decoder (IDEC)
Port P1 (P1)
9
P1 0
12
P1 3
Accumlator (AC)
Port P2 (P2)
13
P2 0
15
P2 2 HOLD
Data Memory (RAM)
Arithmetic Logic control Unit (ALU)
Reset Generator (RG)
3
RST
Hold Control
H Register (HR)
Flag
CF
SF
Timing Generator (TG)
L Register (LR)
LL Register (LLR)
Timer (TC)
Clock Generator (C G)
2
1
X IN
XOUT

IC BLOCK DIAGRAM

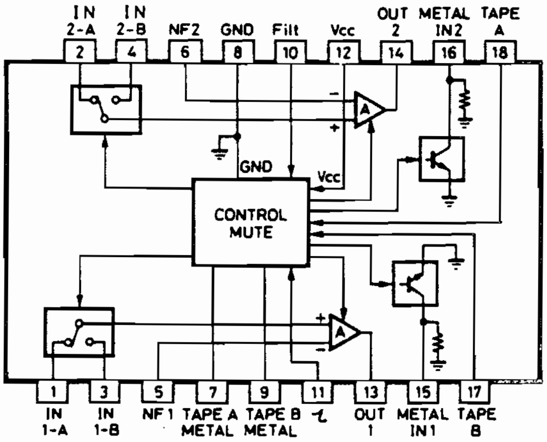
IC601 LB1433N LEVEL METER


AMP
1
2
3
4
5
6
7
8
9
VC1
VC2
VC3
VC4
GND
VC5
AMP OUT
IN
VCC

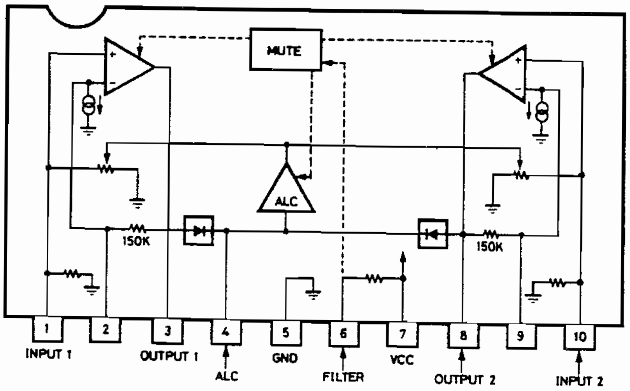
IC681 NJM7805A
(VOLTAGE REGULATOR)


VIN 3
1 VOUT
2
GND
3 2 1

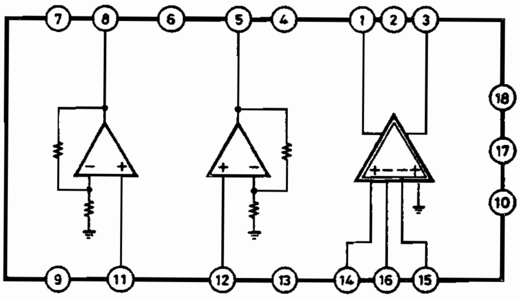
IC901 BA3416BL (LOW NOISE DUAL AMP.)


IN 2-A
IN 2-B
NF2
GND
Filt
Vcc
OUT 2
METAL IN2
TAPE A
2
4
6
8
10
12
14
16
18
A
GND
Vcc
CONTROL MUTE
A
1
3
5
7
9
11
13
15
17
IN 1-A
IN 1-B
NF1
TAPE A METAL
TAPE B METAL
OUT 1
METAL IN1
TAPE B

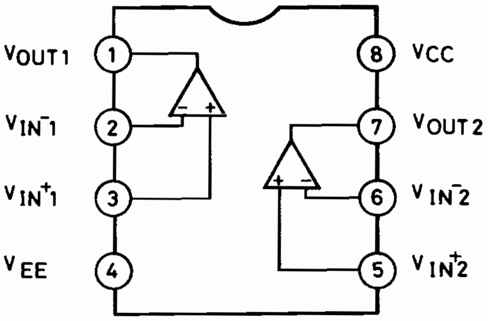
IC902 BA3312N (RECORD AMP.)


MUTE
ALC
150K
150K
1
2
3
4
5
6
7
8
9
10
INPUT 1
OUTPUT 1
ALC
GND
FILTER
VCC
OUTPUT 2
INPUT 2

IC903 LA4630
(3 DIMENSION POWER IC)

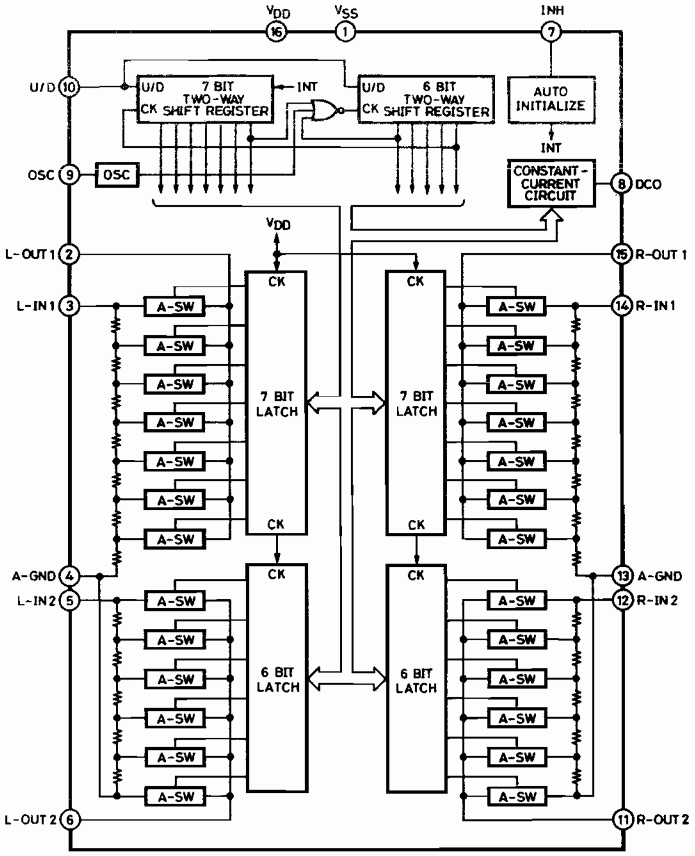

7
8
6
5
4
1
2
3
18
17
10
9
11
12
13
14
16
15

IC905 LA6458D
(DUAL OPERATIONAL AMPLIFIER)

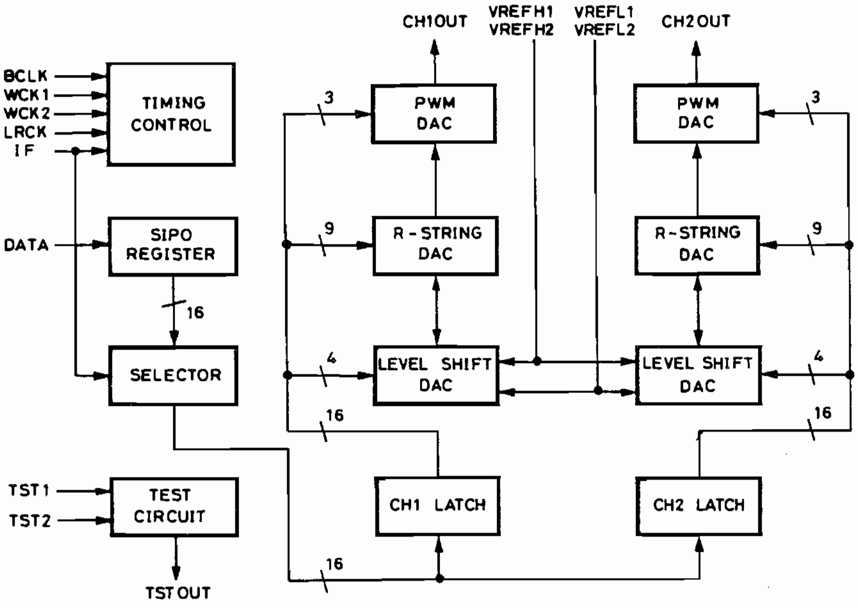

VOUT1
VIN-1
VIN+1
VEE
1
2
3
4
8
7
6
5
VCC
VOUT2
VIN-2
VIN+2

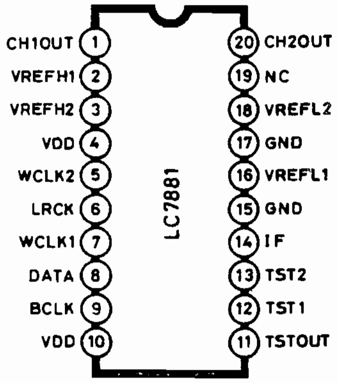
IC BLOCK DIAGRAM

IC904 TC9153AP (ELECTRONIC VOLUME)


VDD 16
VSS 1
INH 7
U/D 10
OSC 9
L-OUT1 2
L-IN1 3
A-GND 4
L-IN2 5
L-OUT2 6
DCO 8
R-OUT1 15
R-IN1 14
A-GND 13
R-IN2 12
R-OUT2 11
U/D 7 BIT TWO-WAY CK SHIFT REGISTER
INT
U/D 6 BIT TWO-WAY CK SHIFT REGISTER
AUTO INITIALIZE
INT
CONSTANT-CURRENT CIRCUIT
OSC
VDD
CK
7 BIT LATCH
6 BIT LATCH
A-SW

IC981 LC7881-1 D/A CONVERTER


CH1OUT
VREFH1
VREFH2
VREFL1
VREFL2
CH2OUT
BCLK
WCK1
WCK2
LRCK
IF
TIMING CONTROL
DATA
SIPO REGISTER
16
SELECTOR
TST1
TST2
TEST CIRCUIT
TST OUT
PWM DAC
R-STRING DAC
LEVEL SHIFT DAC
CH1 LATCH
CH2 LATCH
3
9
4
16


LC7881
CH1OUT 1
VREFH1 2
VREFH2 3
VDD 4
WCLK2 5
LRCK 6
WCLK1 7
DATA 8
BCLK 9
VDD 10
20 CH2OUT
19 NC
18 VREFL2
17 GND
16 VREFL1
15 GND
14 IF
13 TST2
12 TST1
11 TSTOUT

SANYO

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Osaka, Japan

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